

**Title**

Climatology of the Tonopah Test Range (SC-m-68-522) Monitoring Reports for Temperature, Humidity, Precipitation & wind & Direction at TTR/Air Quality

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## CLIMATOLOGY OF TONOPAH TEST RANGE, 1967

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Sandia Laboratories, Albuquerque

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CLIMATOLOGY OF TONOPAH TEST RANGE, 1967

J. R. Schaeffer, 7232  
Sandia Laboratories, Albuquerque

September 1968

ABSTRACT

Part I of this report consists of general information.

Part II is a presentation of Tonopah Test Range climatic summaries of temperature, relative humidity, station pressure, precipitation, and surface winds during 1967.

Part III contains summaries of the same elements based on 7-year averages covering the years 1961 to 1967.

Part IV contains summaries of upper winds based on the years 1961 to 1967.

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**Part I**  
**GENERAL INFORMATION**

## CLIMATOLOGY OF TONOPAH TEST RANGE, 1967

### Station Location

The Tonopah Test Range Weather Station is located at 37 49'21" north latitude, 116 44'38" west longitude, at an elevation of 5388 feet MSL.

It is situated 1 mile SW of the edge of a dry lake in a (generally) NW-SE oriented valley, with the Cactus Mountain Range 9 miles SW, the Kawich Range 15 miles NE, the Monitor Range beginning 15 miles NW, and the Bleted Range 45 miles SE.

### Temperature

Temperature readings were taken at 2-hour intervals on the even-numbered hours throughout the 24 hours of each day. Maximum and minimum temperatures were recorded from midnight to midnight MST. All readings were obtained from a hygrothermograph located in a standard instrument shelter at the weather station.

### Relative Humidity

Relative Humidity summaries were prepared from 2-hour readings and were also obtained from the hygrothermograph.

### Station Pressure

Pressure summaries were prepared from 2-hour readings obtained from a microbarograph located in the weather station.

### Precipitation

Precipitation was collected in a standard 8-inch rain gage and measured once each day.

Thunderstorm and fog occurrences were observed during the hours of 0800 to 1500 MST only, 5 days per week.

### Sky Cover

Because of variable work schedules and an inadequate number of observations, no cloud data have been included in this report.

### Surface Winds

Wind data were obtained by use of Aerovane wind equipment located 18 feet above the surface and were recorded on an Aerovane recorder.

A table showing percentage frequency of surface wind directions and average speeds, by month, is presented instead of the usual wind roses.

Tables showing the percentage of time that wind speeds from a given direction were below a specified speed, as well as the percentage of time when the winds were equal to or greater than 22 knots (25 mph) are presented.

The daily march of wind speeds for 1967 is shown in an annual graph only. Averages for the 7-year period, 1961 to 1967, are presented in monthly graphs as well as in an annual graph.

The daily march of wind direction during the years 1961 to 1967 is given in monthly tables showing the actual number of cases recorded from each direction and the percentage of time that winds were calm.

#### Upper Winds

Upper wind data were obtained from tracking a radar wind reflector with an M-33 radar. Readings were taken at the desired levels. All available winds recorded during the years 1961 to 1967 were used in these summaries.

Percentage of observations, to the nearest whole percent, with wind from indicated directions for each 5000-foot level up to 100,000 feet is shown for each month.

Average wind speeds, in knots, from each direction at 5000-foot intervals up to 60,000 feet are also shown.

**Part II**

**TABLES AND GRAPHS OF TEMPERATURE, RELATIVE HUMIDITY, STATION PRESSURE,  
PRECIPITATION, AND SURFACE WINDS, 1967**

TABLE II-1  
Surface Temperature, 1967

	Averages			Extremes				Number of Days			
	Daily Maximum	Daily Minimum	Monthly	Highest	Date	Lowest	Date	Maximum 90° and above	32° and below	32° and below	0° and below
January	44	18	30	60	15	4	6	0	2	30	0
February	51	22	36	62	12	8	21	0	0	28	0
March	54	30	43	70	22	11	30	0	1	27	0
April	50	28	39	64	27	10	20	0	0	26	0
May	71	40	56	92	22	25	13	2	0	5	0
June	76	47	62	95	30	30	2	2	0	2	0
July	90	58	75	100	2	46	10 19	22	0	0	0
August	90	57	74	97	13 14	45	31	24	0	0	0
September	77	49/8/41	62	87	3	35-28	14 20	0	0	0	0
October	72	34/4/13/6	52	81	11	19-28	16 17	0	0	17	0
November	57	30/7/23	43	72	1	14-07	27 29	0	0	21	0
December	37	13/7/2/3	24	51	11	-15	20 21	0	8	31	3
Year	64	36	50	100	7/2	-15	12/20 12/21	50	11	187	3

TABLE II-2

Average Relative Humidity, 1967  
(Percent)

	<u>0600 MST</u>	<u>1200 MST</u>	<u>1800 MST</u>	<u>2400 MST</u>	<u>Monthly</u>
January	75	48	41	64	58
February	65	33	20	47	43
March	58	32	24	42	39
April	72	36	35	62	52
May	58	23	20	40	34
June	62	24	17	41	35
July	53	19	20	36	32
August	56	22	23	39	34
September	77	34	37	61	52
October	58	30	24	43	40
November	83	52	51	70	64
December	92	60	73	90	78
Year	67	34	32	53	47

TABLE II-3

Average Station Pressure, 1967

	<u>Millibars</u>	<u>Inches of Mercury</u>
January	836.9	24.71
February	838.4	24.76
March	831.3	24.55
April	829.2	24.49
May	834.6	24.65
June	833.7	24.62
July	836.8	24.71
August	837.7	24.74
September	836.0	24.69
October	838.3	24.76
November	835.9	24.68
December	834.7	24.65
Year	835.3	24.67

TABLE II-4  
Precipitation, 1967

	Total Precipitation			Snow, sleet			Number of Days			
	Greatest in 24 hours		Date	Total	Greatest in 24 hours	Date	Precipitation 0.01 inch or more	Snow, sleet 1 inch or more	Thunder- storms	Fog
	Total	24 hours	Date	Total	24 hours	Date				
January	0.39	0.21	22	2.5	1.5	24	3	2	0	1
February	T	T	14	0.5	0.5	14	0	0	0	0
March	0.20	0.15	4	5.0	3.0	4	3	3	0	0
April	1.49	0.30	19	19.5	3.5	19	17	9	0	3
May	0.48	0.25	31	2.5	2.5	31	3	1	3	0
June	1.46	0.79	12	0.0	0.0	--	4	0	2	0
July	0.32	0.15	13	0.0	0.0	--	6	0	3	0
August	0.55	0.17	25	0.0	0.0	--	8	0	4	0
September	1.05	0.55	22	0.0	0.0	--	7	0	4	0
October	0.00	0.00	--	0.0	0.0	--	0	0	0	0
November	0.76	0.22	16	1.0	1.0	30	6	1	0	2
December	0.03	0.02	19	2.5	2.0	19	2	1	0	3
Year	6.73	0.79	6/12	33.5	3.5	4/19	59	17	16	9

TABLE II-5

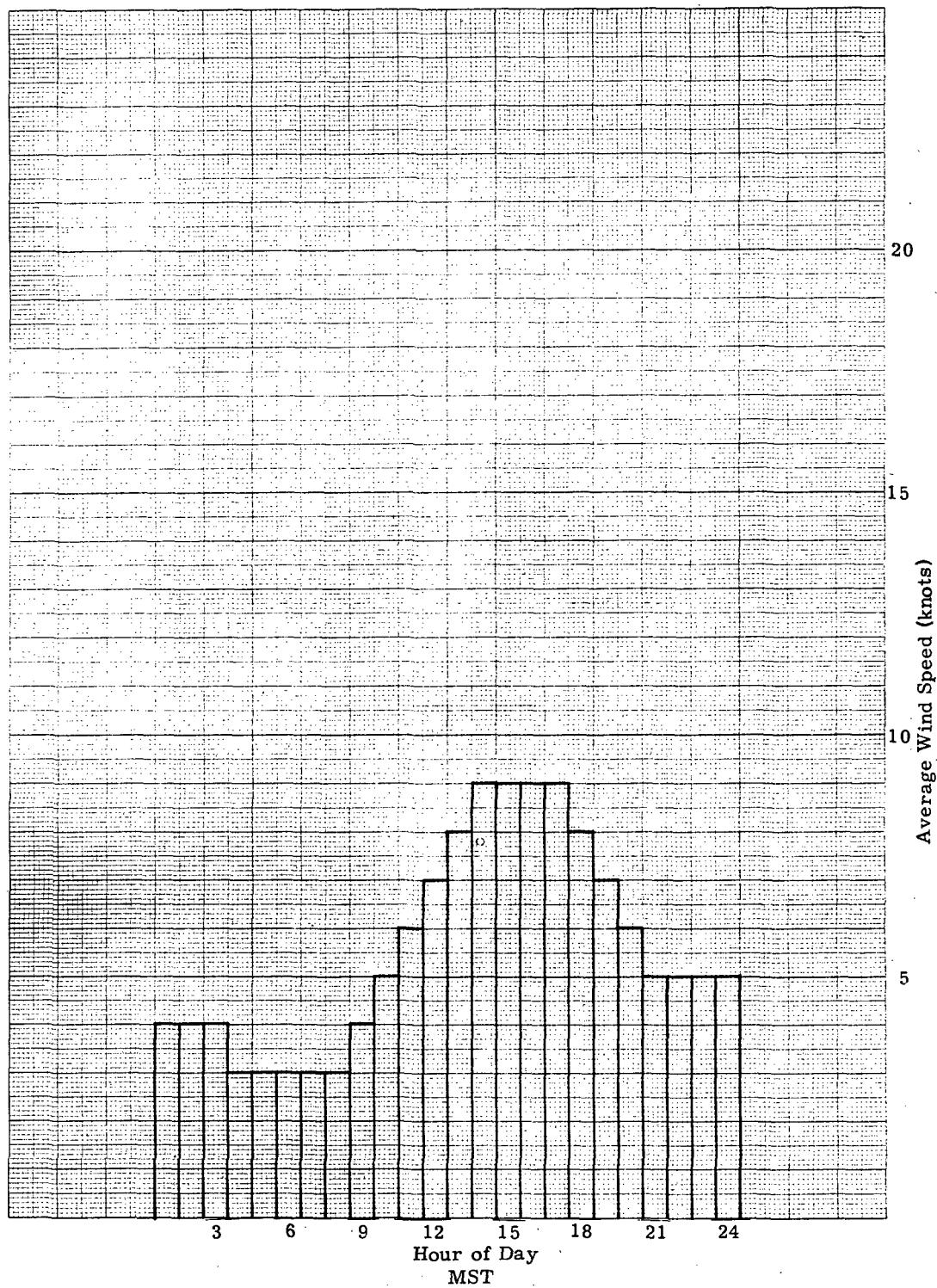
Surface Winds, 1967  
(Percent Frequency and Average Speed)

Direction		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
N	%	2.2	4.7	0.9	0.4	5.8	7.9	3.0	2.8	4.5	3.0	2.1	8.9	3.8
	Av	5	8	8	6	7	6	7	7	7	9	8	9	7
NNE	%	0.3	1.0	0.3	0.0	2.4	4.7	1.9	1.2	2.5	2.1	0.3	2.2	1.6
	Av	3	9	6	-	10	8	9	10	7	8	5	13	8
NE	%	0.0	0.0	0.0	0.0	1.2	0.8	1.1	0.5	0.7	0.0	0.0	0.0	0.4
	Av	-	-	-	-	7	8	6	8	5	-	-	-	7
ENE	%	0.1	0.0	0.1	0.3	0.9	0.4	0.3	0.0	0.3	0.0	0.1	0.0	0.2
	Av	6	-	8	4	6	7	6	-	4	-	5	-	6
E	%	0.5	0.0	0.1	0.8	0.0	0.7	0.7	0.8	1.1	0.1	0.2	0.4	0.4
	Av	4	-	5	7	-	5	6	8	9	12	10	9	8
ESE	%	2.0	0.8	3.2	5.4	0.4	1.2	2.7	2.6	2.1	1.3	1.8	1.4	2.1
	Av	7	5	6	7	5	6	5	6	7	8	6	8	6
SE	%	4.8	4.0	7.0	6.8	4.2	3.5	5.0	6.1	4.5	3.8	6.8	4.3	5.1
	Av	8	6	9	7	6	7	7	6	6	6	7	8	7
SSE	%	6.2	6.1	10.6	9.7	4.2	8.4	6.3	8.9	7.2	5.9	13.3	3.4	7.5
	Av	8	8	12	10	6	9	6	6	6	7	8	9	8
S	%	5.7	2.9	24.6	20.7	9.6	9.2	13.2	14.0	9.4	9.3	9.9	2.9	11.0
	Av	12	9	16	16	10	9	8	7	8	11	9	10	10
SSW	%	0.9	1.3	3.6	7.1	5.1	5.4	10.2	10.9	4.7	4.7	2.5	1.7	4.8
	Av	8	8	14	12	9	8	7	9	7	8	7	11	9
SW	%	0.9	0.3	1.1	1.1	2.8	2.4	1.7	3.0	1.4	2.0	0.8	0.3	1.5
	Av	6	8	7	8	6	10	6	10	7	6	5	7	7
WSW	%	0.8	1.0	0.9	1.1	2.8	1.8	2.8	3.4	2.1	1.2	0.8	0.1	1.6
	Av	3	4	5	6	5	6	6	6	7	5	4	6	5
W	%	6.1	5.2	4.6	3.5	4.6	4.5	5.9	7.3	5.0	5.0	3.8	7.1	5.2
	Av	6	6	9	8	8	5	6	7	6	7	5	10	7
WNW	%	11.6	14.0	9.8	9.6	9.3	10.6	6.0	5.0	5.8	9.3	9.3	12.9	9.4
	Av	9	9	8	12	8	8	7	7	8	8	9	9	8
NW	%	10.0	16.4	5.7	7.8	8.4	7.8	3.5	3.5	3.3	7.3	4.0	10.0	7.3
	Av	9	8	10	11	6	7	8	5	6	9	7	8	8
NNW	%	4.6	7.2	2.6	3.2	8.6	6.6	2.7	5.1	5.0	5.9	3.6	6.9	5.2
	Av	6	7	8	9	6	5	6	5	5	8	6	7	6
CALM	%	43.3	35.1	24.9	22.5	29.7	24.1	33.0	24.9	40.4	39.1	40.7	37.5	32.9

TABLE II-6

Wind Speed versus Direction  
 (Percent of Observations)  
 1967

<u>Direction</u>	<u>Less than 4 knots</u>	<u>Less than 11 knots</u>	<u>Less than 17 knots</u>	<u>Less than 22 knots</u>	<u>22 knots and over</u>
N	5	80	99	99	1
NNE	3	72	91	98	2
NE	3	88	97	100	0
ENE	11	100			0
E	8	85	98	100	0
ESE	4	92	99	100	0
SE	3	85	98	99	1
SSE	4	74	96	99	1
S	1	53	80	91	9
SSW	2	72	95	99	1
SW	5	82	99	100	0
WSW	12	94	100		0
W	6	86	98	99	1
WNW	4	75	95	99	1
NW	6	76	93	97	3
NNW	5	88	99	99	1
All winds	36	83	96	98	2



Graph II-1. Daily March of Surface Wind Speed, 1967

**Part III**

**TABLES AND GRAPHS BASED ON 7-YEAR AVERAGES OF METEOROLOGICAL  
ELEMENTS AT TONOPAH TEST RANGE, 1961-1967**

TABLE III-1  
Surface Temperature, 7-Year Averages and Extremes  
(1961-1967)

	Averages							Average Number of Days			
				Extremes				Maximum		Minimum	
	Daily max	Daily min	Monthly	Highest	Date	Lowest	Date	90 and above	32 and below	32 and below	0 and below
January	44	13	28	65	17/61	-24	24/62	0	3	30	3
February	49	20	34	70	5/63 7/63	-5	27/62	0	1	26	1
March	52	24	38	78	31/66	1	1/62	0	0	28	0
April	62	31	47	82	17/62 18/62	9	20/66	0	0	17	0
May	71	40	56	92	22/67	19	7/64	0	0	4	0
June	79	48	65	102	21/61	30	2/67	6	0	0	0
July	90	54	74	100	24/64 2/67	41	28/65	19	0	0	0
August	88	54	72	98	6/66 8/66 9/66 10/66	40	29/62 26/63	15	0	0	0
September	79	44/37/41	62	91	18/62	28	30/61 19/65	1	0	2	0
October	70	36/39/36	53	87	1/63 5/64	15	23/61	0	0	12	0
November	54	25/-2/13	38	74	2/62 3/62	-3	19/64 20/63	0	2	24	1
December	45	17/-4/13	29	64	24/64	-15	20/67 21/67	0	4	30	1
Year	65	34	50	102	21/61	-24	24/62	41	10	173	6

TABLE III-2  
Relative Humidity in Percent, 7-Year Averages  
(1961-1967)

	<u>0600 MST</u>	<u>1200 MST</u>	<u>1800 MST</u>	<u>2400 MST</u>	<u>Monthly</u>
January	68	42	35	58	52
February	69	37	28	53	48
March	58	29	23	43	39
April	55	26	21	38	35
May	51	23	21	37	32
June	47	20	17	32	28
July	36	17	14	25	23
August	46	20	19	33	29
September	46	22	19	34	30
October	48	25	21	36	33
November	68	40	37	58	52
December	77	44	45	67	59
Year	56	29	25	43	38

TABLE III-3  
Station Pressure, 7-Year Averages  
(1961-1967)

	<u>Millibars</u>	<u>Inches of Mercury</u>
January	836.3	24.70
February	835.2	24.66
March	831.6	24.56
April	831.2	24.54
May	832.0	24.57
June	832.4	24.58
July	835.0	24.66
August	836.0	24.69
September	834.7	24.65
October	836.8	24.71
November	835.3	24.67
December	835.2	24.66
Year	834.3	24.64

TABLE III-4  
Precipitation, 7-Year Averages  
(1961-1967)

	Total Precipitation (Inches)	Total Snow, sleet (Inches)	Number of Days			
			Precipitation 0.01 inch or more	Snow, sleet 1.0 inch or more	Thunderstorms	Fog
January	0.19	2	1	1	0	1
February	0.24	3	2	1	0	1
March	0.19	3	4	2	1	1
April	0.49	4	5	2	1	1
May	0.56	3	4	1	1	1
June	0.54	0	4	0	2	0
July	0.30	0	3	0	1	0
August	1.06	0	5	0	1	0
September	0.61	0	2	0	1	0
October	0.11	1	1	0	0	0
November	0.40	2	4	1	0	1
December	0.23	1	2	1	0	1
Year	4.92	19	37	9	8	7

TABLE III-5

Surface Winds 1961-1967  
(Percent Frequency and Average Speed)

Direction		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
N	%	3.5	7.4	4.7	4.7	4.6	5.7	1.9	2.8	3.0	3.7	2.8	4.4	4.1
	Av	6	7	9	8	6	6	6	4	6	8	6	6	6
NNE	%	0.9	1.9	1.7	1.7	1.8	2.6	0.9	1.3	2.1	1.8	1.2	1.3	1.6
	Av	6	7	8	6	7	6	6	7	7	8	6	6	7
NE	%	0.4	0.8	0.7	0.5	0.8	0.7	0.9	1.0	0.7	0.7	0.6	0.4	0.7
	Av	2	4	5	4	4	5	6	6	6	5	5	3	5
ENE	%	0.3	0.3	0.5	0.4	0.6	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4
	Av	3	3	5	4	6	4	6	4	4	4	2	2	4
E	%	0.9	1.1	1.3	1.1	1.2	0.7	1.1	1.6	1.0	1.1	0.6	0.6	1.0
	Av	5	4	5	5	6	6	4	6	6	6	5	4	5
ESE	%	2.3	2.6	3.9	2.8	3.1	2.5	4.0	3.9	3.2	3.1	3.2	1.7	3.0
	Av	5	6	6	6	6	6	6	6	5	6	6	7	6
SE	%	7.1	7.6	8.1	7.2	8.2	6.3	11.8	10.2	8.9	8.2	10.4	8.1	8.5
	Av	7	7	8	7	7	6	7	6	6	7	7	6	7
SSE	%	6.4	7.5	9.1	8.0	8.8	7.3	11.9	10.0	8.7	9.0	12.2	7.6	8.9
	Av	8	9	10	9	8	8	8	7	6	8	8	9	8
S	%	5.2	4.9	9.8	11.9	12.2	12.0	20.4	15.2	14.0	9.2	9.2	5.4	10.8
	Av	9	9	13	12	12	11	10	10	9	8	10	8	10
SSW	%	2.0	3.0	4.3	5.7	6.5	7.7	10.4	10.6	7.0	4.4	2.8	2.0	5.5
	Av	6	8	11	10	10	10	10	10	9	7	6	8	9
SW	%	1.1	1.5	2.1	2.8	3.8	3.5	3.7	4.6	2.3	2.4	1.6	1.1	2.5
	Av	4	6	6	8	8	7	8	8	6	6	4	6	6
WSW	%	1.5	1.8	1.7	2.2	3.0	3.7	2.4	2.5	2.0	2.2	1.7	1.6	2.2
	Av	3	4	5	6	6	6	6	6	5	5	4	3	5
W	%	7.6	6.2	6.0	6.3	6.9	7.1	4.4	4.8	5.6	6.1	5.4	6.8	6.1
	Av	7	7	8	6	8	7	7	5	5	6	7	7	7
WNW	%	14.8	14.3	12.4	12.7	10.8	11.6	4.7	4.8	7.3	9.5	10.1	12.8	10.5
	Av	9	9	10	11	9	8	7	7	6	7	8	8	8
NW	%	12.7	15.0	14.3	14.0	12.2	11.0	4.5	5.0	7.8	9.3	8.3	11.4	10.5
	Av	8	10	10	11	9	8	6	6	6	6	7	7	8
NNW	%	5.7	7.6	6.3	6.2	6.2	6.1	2.7	3.6	4.1	5.2	4.2	5.5	5.3
	Av	6	6	7	8	7	6	6	5	5	5	6	5	6
CALM	%	27.6	16.5	13.1	11.8	9.3	11.1	13.9	17.7	22.0	23.8	25.4	29.0	18.4

TABLE III-6

Daily March of Wind Direction (1961-1967), January  
(Number of Observations)

Hour of Day (MST)	N	Direction													Previous Direction	Average Speed	% Total Obs Calm		
		NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
1	4	1	3		2	3	21	10	14	3	2		19	26	27	19	NW	6	27.0
2	7	1			3	5	10	18	12	2	2	2	14	33	25	10	WNW	7	31.8
3	11	2	1		1	6	12	12	12	2	1	1	16	26	23	9	WNW	8	35.7
4	8	1	1	1	2	5	10	9	15		1	4	14	38	12	19	WNW	6	33.3
5	7	2	1			7	10	7	9	5	2	1	21	29	25	12	WNW	6	34.3
6	9	1	2		3	8	13	9	12	3	2	4	20	29	15	14	WNW	6	31.8
7	4	5	1		3	3	16	14	6	2	1	7	20	22	24	15	NW	5	32.2
8	5	5		4	1	2	17	11	5	4	2	6	20	17	21	12	NW	5	37.4
9	14	1	2		1	6	13	7	13		1	5	14	20	18	13	WNW	8	39.3
10	12	1			5	7	21	5	3	1		1	5	24	25	16	NW	7	40.6
11	6	3	1	1	2	2	17	9	4	3	2	1	5	27	43	16	NW	7	33.3
12	8	3	1	1		3	14	12	6	2			6	32	44	17	NW	9	29.7
13	8	2		1	2	3	16	13	7	4	2	3	8	37	40	14	NW	9	24.9
14	5	2	1		1		11	17	11	7			6	41	47	15	NW	9	23.0
15	5	2			1	6	15	12	13	6	2	1	10	41	47	9	NW	11	19.4
16	9	2	1	1		6	14	17	16	5	2	1	19	46	34	7	WNW	10	15.5
17	8	1	1		1	3	10	19	13	6	1	1	15	47	35	8	WNW	10	20.7
18	5	2					13	20	16	10	5	5	28	37	25	9	WNW	10	17.8
19	4	1	1		1	3	12	19	21	13	13	10	28	36	19	4	WNW	8	13.1
20	6			3	2	5	19	18	14	11	4	7	26	28	21	5	WNW	8	20.7
21	8	1	1	1	8	11	20	19	9	3	2	13	25	25	17	8	WNW	7	19.7
22	7	3			7	6	20	16	14	7	3	2	23	24	19	8	WNW	8	25.4
23	9	1	1		2	9	16	16	10	2	3	2	15	31	21	16	WNW	8	27.7
24	7	4	2		1	5	22	15	9	1	1	1	15	31	26	13	WNW	7	28.2

TABLE III-7  
Daily March of Wind Direction (1961-1967), February  
(Number of Observations)

Hour of Day (MST)	N	<u>Direction</u>															Previous Direction	Average Speed	% Total Obs Calm
		NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
1	18			1	2	9	12	20	7	4	5	6	19	24	20	16	WNW	7	15.5
2	10	1	1		3	2	23	13	8	4	3	5	18	24	26	16	NW	6	18.7
3	7	2			1	10	17	12	3	3	2		10	31	35	10	NW	6	25.9
4	7	3	1		5	5	12	15	7	2	2	6	13	30	27	19	WNW	6	20.2
5	12			1		6	16	9	4	3	4	4	10	27	36	14	NW	6	24.4
6	6	2	2		3	3	17	6	6	3	3	5	20	21	31	20	NW	6	23.3
7	12	4	1		4	6	9	8	6	8	5	4	11	23	29	11	NW	5	26.9
8	6	3	3	2		4	10	15	2	6	1	4	10	26	34	16	NW	5	26.4
9	16	2	1	1	3	3	11	13	3	5		2	8	26	18	20	WNW	9	31.2
10	18	1	4		1	5	13	12	1	1	1	2	6	28	26	18	WNW	9	29.4
11	18	7	1	1	2	6	15	7	7	3	1		4	28	36	14	NW	10	23.1
12	19	5	2	1	1	8	14	13	11	2			4	26	44	17	NW	9	14.4
13	16	6		2		6	19	13	10	3	2	1	2	34	35	21	NW	11	12.4
14	22	9		1	3	3	14	15	11	8	2	3	7	36	31	13	WNW	12	8.7
15	24	6	3	1	3	4	12	11	20	6	6	1	6	35	30	13	WNW	12	7.2
16	19	6	5		2	3	10	11	18	10	5	4	4	39	35	10	WNW	12	7.2
17	20	6	3		4	3	11	19	18	13	2	1	7	34	33	12	WNW	12	4.6
18	21	5	4		2	3	5	20	16	14	3	3	9	36	24	10	WNW	12	9.8
19	15	3	3		2	2	6	16	21	16	4	5	21	28	26	14	WNW	11	6.2
20	10	3		3	4	16	16	12	14	7	10	17	27	20	16	WNW	9	9.8	
21	11	6	1		2	7	23	22	11	6	5	5	21	20	25	10	NW	8	9.8
22	17	2	1		3	8	21	27	8	3	2	4	22	24	24	11	SSE	7	8.8
23	12	2		1	1	8	29	18	7	3	3	4	19	20	31	17	NW	6	9.8
24	13	2			2	3	25	17	12		4	1	21	19	26	18	NW	8	16.0

TABLE III-8

Daily March of Wind Direction (1961-1967), March  
(Number of Observations)

Hour of Day (MST)	N	<u>Direction</u>															Previous Direction	Average Speed	% Total Obs Calm
		NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
1	9	5			3	14	23	30	17	3	2	5	20	26	23	12	SSE	7	11.5
2	10	1	2	1	5	9	25	22	20	4	4	3	17	30	20	15	WNW	.8	13.4
3	8	3	1		9	12	21	21	11	3	2	2	17	32	19	19	WNW	8	17.0
4	6		1	1	2	13	13	24	10	4	4	4	21	28	33	15	NW	7	17.5
5	8		1	2		9	13	27	8	2	1	5	19	31	28	16	WNW	7	21.7
6	6	1		4	2	5	24	16	15		1	3	17	24	32	15	NW	5	24.0
7	6	3	1		1	10	15	14	9	4	1	5	12	29	29	14	NW	6	29.5
8	8	1		2	3	5	18	16	7	1	3	5	9	28	28	16	NW	6	30.9
9	13	4	1		4	10	21	15	5	3		1	5	19	31	21	NW	7	29.5
10	9	6	1		3	6	22	17	11	3	2		4	23	37	20	NW	9	24.4
11	11	5		1	3	11	22	18	19	6			6	22	50	12	NW	11	14.3
12	20	4	2		1	6	17	18	24	8	6	2	10	29	36	12	NW	14	10.1
13	13	6	1	1	4	2	10	23	28	15	9	4	8	22	43	11	NW	15	7.8
14	8	3	2	1		1	13	19	32	23	7	5	13	26	37	13	NW	16	6.5
15	9	5	2	1	3	2	9	18	31	19	10	2	16	30	36	11	NW	16	6.0
16	9	4		2	3	3	12	17	35	15	10	6	9	32	42	13	NW	14	2.3
17	15	5	2	4		2	8	12	43	18	7	4	15	21	48	9	NW	14	1.8
18	16	7	6	1	2	6	6	15	41	18	6	4	10	23	41	12	NW	13	1.4
19	16	6	7	2	1	4	4	21	38	20	5	1	9	29	28	13	S	12	6.0
20	8	4	2	1	3	5	13	21	38	19	9	8	13	23	22	18	S	10	4.6
21	12	1		3	8	22	21	30	17	11	8	14	31	13	15	WNW	9	5.1	
22	12	4	1	1	4	14	31	26	19	10	1	1	16	26	21	11	SE	6	8.8
23	9	5	1	1	8	20	35	18	9	5	7	7	13	31	21	7	SE	7	9.2
24	3	3	2		2	22	25	27	17	3	3	6	20	27	25	9	WNW	8	10.6

TABLE III-9  
Daily March of Wind Direction (1961-1967), April  
(Number of Observations)

Hour of Day (MST)	N	<u>Direction</u>															Previous Direction	Average Speed	% Total Obs. Calm
		NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
1	11	2	1	1	4	18	22	22	16	5	5	2	14	32	16	13	WNW	9	11.5
2	12	1			2	11	19	22	19	7	3	4	20	27	22	12	WNW	8	13.0
3	9	3	2		3	11	18	18	14	3	2	5	25	26	27	11	NW	7	14.9
4	11	2	1	2	4	7	15	22	14	3	1	2	19	24	30	11	NW	8	19.2
5	10	2	1		3	8	18	17	11	3	1	4	18	25	30	12	NW	7	21.6
6	9	1	1	3	3	8	18	14	10	3	4	5	22	24	28	16	NW	7	18.8
7	9		1		5	7	18	21	5	3	2	4	12	33	25	13	WNW	8	23.7
8	13	5			5	5	22	12	9	4	3	1	6	22	34	19	NW	8	23.1
9	12	3	2		1	9	25	19	9	6	3	2	3	18	35	24	NW	10	17.8
10	10	5	1	1	1	6	25	18	15	5	3	1	3	22	43	14	NW	11	16.8
11	13	3			2	3	16	27	22	10	4	3	3	21	38	15	NW	13	13.9
12	9	5	1	1	1	1	8	23	28	21	3	3	5	21	42	13	NW	12	10.6
13	7	6	1	1	2	1	6	16	42	12	11	8	9	31	28	14	S	15	6.7
14	12	4	4	2	1		7	14	35	20	15	6	12	35	22	10	S	15	4.3
15	10	4			1	1	5	14	40	18	14	12	10	28	29	12	S	16	4.8
16	9	2	2		1	2	4	10	38	24	9	5	14	35	29	14	S	18	4.8
17	5	5			1	4	3	10	36	21	14	6	14	35	36	9	NW	14	4.3
18	6	5			3	3	3	8	34	23	12	6	11	31	39	15	NW	14	4.3
19	6	4	2	3	1	1	5	6	42	24	4	2	9	33	37	11	S	14	8.7
20	13	2	2	2	3	1	3	11	51	13	6	8	10	22	33	11	S	11	8.2
21	12	4	1	1	2	4	7	20	36	22	9	5	15	25	24	8	S	11	6.2
22	9	5		2		7	26	18	30	13	7	4	18	19	21	12	S	9	7.7
23	10	4	2	1	2	11	37	15	20	7	3	11	24	21	15	10	SE	7	6.8
24	6	7	1	1	5	11	29	20	16	10	4	4	21	24	13	10	SE	6	12.1

TABLE III-10

Daily March of Wind Direction (1961-1967), May  
(Number of Observations)

Hour of Day (MST)	Direction															Previous Direction	Average Speed	% Total Obs Calm	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
1	4	2	1		5	11	33	23	16	3	4	10	20	23	25	13	SE	6	9.8
2	10	3	2	3	1	12	26	17	17	11	7	3	20	23	17	15	SE	6	12.6
3	6	3		2	5	8	22	23	11	7	5	6	19	26	26	15	WNW	8	14.0
4	4	2	2	2	1	5	24	20	15	6	9	8	17	27	30	14	NW	5	13.1
5	9	4	1		1	3	18	24	8	6	6	8	19	32	27	11	WNW	7	16.9
6	11	2	1		2	6	16	22	13	3	3	4	26	21	26	19	NW	5	17.8
7	7	2	3	2		9	24	11	10	6	3	2	8	29	26	19	WNW	9	24.8
8	18	7	1		4	8	20	15	8	1	1	3	8	22	32	18	NW	8	22.1
9	13	8	3		4	11	20	11	18	5	1		8	23	29	24	NW	9	15.6
10	13	4	2	1	3	7	21	17	20	6	3	2	7	20	42	17	NW	9	13.6
11	9	7	2	2	3	4	18	22	26	12	9	3	13	26	30	13	NW	11	6.6
12	10	3	1	2	2	8	14	16	37	16	8	10	10	25	28	13	S	14	5.1
13	13	1	3	1	4	5	13	19	40	16	16	4	23	19	19	12	S	14	3.3
14	13	2		1	2	4	14	16	36	26	14	8	22	24	21	6	S	13	2.8
15	10	3	1	3	2	5	9	13	39	32	16	9	18	23	19	7	S	15	2.8
16	10	3	1	2	1	4	9	13	47	25	18	5	9	32	24	10	S	13	0.9
17	11	1	2	1	1	1	6	17	44	27	13	10	19	16	30	12	S	13	1.4
18	8	10	1	1		3	6	14	43	27	12	6	15	18	28	12	S	15	4.7
19	13	6	3	3	1	1	6	17	47	22	11	7	11	14	32	16	S	13	2.3
20	7	6	5	1	3	3	6	21	43	24	15	6	13	13	30	11	S	10	3.7
21	11	7		1		2	15	26	34	22	10	5	16	17	26	10	S	9	6.0
22	11	4	3	2	5	5	24	27	25	15	9	9	11	24	18	11	SSE	7	5.6
23	10	3	2	1	8	19	27	24	15	6	3	12	14	27	24	8	SE	6	5.6
24	7	2		1	4	16	33	24	13	7	5	8	12	29	24	12	SE	6	8.4

TABLE III-11

Daily March of Wind Direction (1961-1967), June  
(Number of Observations)

Hour of Day (MST)	Direction															Previous Direction	Average Speed	% Total Obs Calm	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
1	12	4	1		1	10	24	26	6	5	4	4	25	29	23	13	WNW	7	11.0
2	15	3		1	6	4	18	20	13	6	4	8	22	30	22	12	WNW	7	12.4
3	9	6		1	2	3	14	16	21	4	6	7	25	33	23	13	WNW	6	12.9
4	11	1				1	13	19	15	6	2	11	28	26	24	18	W	6	16.7
5	14	3	1			2	7	23	13	5		7	24	32	25	16	WNW	7	18.1
6	15	1		1	2	4	10	15	5	2	5	9	18	33	26	14	WNW	5	23.8
7	17	8			1	5	18	6	6	1	2	2	12	22	32	18	NW	6	27.9
8	21	6	2	1	2	5	19	6	5			2	9	19	34	19	NW	6	28.2
9	25	9		1		6	21	12	8	1	1	5	6	28	28	21	NW	6	18.1
10	16	6	5			11	15	14	21	11	4	2	8	19	32	16	NW	7	14.3
11	11	6	4	1	3	11	13	17	20	16	1	12	8	25	23	11	WNW	8	13.3
12	17	6	1	1	3	1	12	24	39	19	15	5	10	14	19	11	S	11	5.7
13	7	4	4	1	2	2	10	21	35	35	10	14	13	23	16	8	S	11	2.4
14	10	5	1	2	2	2	7	16	44	29	23	9	7	25	16	7	S	11	1.9
15	8	8	2	1	1	3	6	18	35	33	18	6	21	15	17	14	S	13	1.9
16	6	5	1	1	3	2	4	17	39	31	14	13	18	22	17	15	S	13	1.0
17	11	4	3			2	5	12	39	35	20	10	9	21	24	10	S	13	2.4
18	9	11	3	2	1	2	4	9	41	38	11	17	7	10	25	13	S	13	3.3
19	6	12	3	1	2		3	9	51	24	13	7	10	19	28	11	S	12	5.2
20	8	7	1	1		3	2	9	54	23	9	4	10	24	28	11	S	10	7.6
21	7	6	3		2	1	7	9	48	22	4	16	11	30	19	8	S	8	8.1
22	8	3	3		4	8	20	15	24	22	3	6	16	24	19	9	S	7	12.4
23	12	2	1	1		23	32	15	12	13	4	4	18	35	13	6	WNW	7	9.0
24	15	4		2		14	33	17	11	6	4	6	21	29	18	12	SE	5	8.6

TABLE III-12

Daily March of Wind Direction (1961-1967), July  
(Number of Observations)

Hour of Day (MST)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Direction		Previous Direction	Average Speed	% Total Obs Calm
1	4	3	4	1	1	22	50	41	17	5	5	4	17	9	6	4	SE	6	10.6		
2	4	3	2		7	11	38	42	32	4		4	18	15	9	2	SSE	5	11.2		
3	3	2			1	11	22	42	27	9	4	7	17	12	15	4	SSE	5	17.8		
4	4	1	3	2	2	5	21	34	34	6	5	6	13	16	12	6	SSE	5	20.6		
5	5	1	1		1	12	21	27	30	9	3	6	14	17	11	7	S	5	22.9		
6	3	1			6	5	18	20	25	3	1	3	15	16	10	6	S	5	38.6		
7	2		1	2	1	2	23	21	8	1	1	1	7	13	16	11	SE	5	48.6		
8	6	1	1	1	4	8	35	12	6	1			4	12	13	17	SE	5	43.5		
9	8	6	4		2	16	33	16	15	3	1	1	1	14	15	15	SE	7	30.2		
10	6		1	1	2	11	34	28	24	10	3	3	3	12	14	11	SE	7	24.2		
11	1	3	5			10	17	31	46	21	6	3	5	10	11	7	S	10	18.5		
12	3	1	2	1	3	4	13	23	59	37	18	5	2	10	4	5	S	10	12.0		
13	4		2	1	4	7	24	10	63	43	15	6	8	8	3	4	S	12	6.5		
14	2	1	1	2	4	5	9	24	63	52	17	9	7	4	10	2	S	12	1.9		
15	1		2			7	10	16	62	62	18	11	4	11	5	2	SSW	10	2.3		
16	6	1	1	1	3	2	9	13	66	54	28	7	9	5	7		S	12	1.9		
17	4	3	1	6	2	15	12	64	58	14	11	7	6	7	3		S	12	1.4		
18	3	4	3	1	2	2	9	22	63	48	16	8	14	4	7	5	S	12	2.3		
19	5	3	3	1	1	3	11	14	88	36	9	8	8	8	7	7	S	11	1.9		
20	4	1	1	2	1	7	9	20	94	28	10	3	4	8	14	7	S	9	1.4		
21	6	2	1			3	9	32	92	23	4	2	8	13	11	6	S	7	1.9		
22	6	1	3		2	8	26	51	50	16	5	6	13	6	11	3	SSE	7	4.2		
23	3	7	2	1	3	14	73	37	17	9	6	4	14	8	5	2	SE	6	5.1		
24	4	1	3	1	3	28	79	24	11	5	4	6	12	8	11	4	SE	6	5.6		

TABLE III-13

Daily March of Wind Direction (1961-1967), August  
 (Number of Observations)

Hour of Day (MST)	Direction															Previous Direction	Average Speed	% Total Obs Calm	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
1	5	2	1	1	2	20	41	35	19	4	3	5	10	12	13	9	SE	5	15.7
2	6	2	1	4	9	28	47	26	5	5	1	16	12	11	7	SSE	5	16.7	
3	4	2	4	4	3	10	16	33	31	5	4	4	11	17	10	13	SSE	5	20.8
4	7	3	3	3	2	5	23	26	22	6	4	7	17	11	10	6	SSE	6	29.6
5	6	4	2	1	6	23	24	21	5	2	4	14	8	19	6	SSE	4	32.9	
6	6	3	2	1	4	19	21	12	2	7	4	11	7	19	13	SSE	5	39.1	
7	6	1	1	3	4	20	16	6	2	3	3	7	6	23	12	NW	4	47.4	
8	11	2	3	2	8	34	11	5	2			1	5	15	14	SE	5	47.4	
9	14	8	3	1	4	11	23	20	12	1	2	1	8	7	15	SE	5	39.8	
10	10	1	4	4	8	26	20	22	10	1	1	3	6	18	14	SE	6	31.2	
11	6	2	3	1	4	8	20	25	26	19	5	3	5	13	12	S	10	25.2	
12	4	1	2	3	3	8	14	19	48	26	14	3	13	9	11	S	11	13.1	
13	4	1	3	2	2	10	30	49	34	13	9	16	13	14	4	S	12	5.1	
14	2	1	1	4	2	13	17	48	54	19	14	13	10	9	2	SSW	11	3.2	
15	2	1	5	3	13	13	48	46	29	13	11	11	8	6	S	12	3.2		
16	3	2	4	4	8	17	43	59	22	11	17	12	4	3	SSW	11	3.2		
17	4	3	3	4	3	10	12	49	47	30	7	14	9	11	S	12	2.3		
18	8	2	2	1	5	4	16	11	47	53	22	5	10	13	6	SSW	10	3.7	
19	7	2	3	2	4	16	8	62	41	22	7	8	12	8	6	S	10	3.7	
20	3	8	1	1	4	6	9	6	78	37	8	7	7	12	9	7	S	9	6.0
21	11	6	2	3	8	9	25	48	46	9	8	8	8	5	3	S	8	7.9	
22	6	5	1	2	8	8	29	34	37	24	12	5	11	8	3	S	7	6.0	
23	6	5	5	9	29	54	23	15	12	4	3	8	16	4	4	SE	6	8.8	
24	4	4	1	1	6	27	56	24	11	7	3	2	15	12	8	6	SE	6	13.0

TABLE III-14

Daily March of Wind Direction (1961-1967), September  
(Number of Observations)

Hour of Day (MST)	<u>Direction</u>															Previous Direction	Average Speed	% Total Obs Calm	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
1	5	2			6	11	28	37	15	2	3	3	15	16	14	10	SSE	5	19.7
2	6	4	3		2	4	20	35	14	1	2	2	13	18	19	9	SSE	5	26.9
3	4	6			2	8	14	18	19	2	4	4	21	16	18	10	W	4	29.8
4	6	3			2	5	12	21	14	1	2	3	20	19	17	12	SSE	5	34.1
5	4	3	1			2	15	19	10	2	1	2	15	18	22	14	NW	4	38.5
6	8	1	1			6	8	15	13	4	2	2	16	13	21	9	NW	5	42.8
7	4		2	2	1	2	13	7	8	1	2		12	14	21	11	NW	5	51.9
8	13	2		1		4	18	8	1			1	3	16	16	13	SE	5	53.8
9	12	7	1	1	3	6	24	12	1	1	1	1	2	9	16	12	SE	6	47.3
10	11	5	3	2	4	7	31	17	6	6	1		1	5	24	13	SE	6	34.9
11	10	6			2	8	20	30	23	13	1	3	5	15	11	14	SSE	7	23.0
12	7	6			4	7	8	26	46	14	4	4	7	18	18	14	S	10	12.0
13	8	5	2	1	2	7	13	16	43	32	7	12	10	18	10	11	S	11	5.3
14	9	9	1		2	6	8	10	57	38	10	9	9	10	22	4	S	11	2.4
15	5	10	2	2	1	3	8	9	56	32	16	8	14	13	18	6	S	11	2.9
16	6	7	2	1	2	6	9	9	54	38	10	5	10	19	18	6	S	11	3.3
17	3	4	3	1	2	4	5	11	54	41	12	4	10	12	23	5	S	11	7.2
18	3	7	6		4	7	6	4	59	35	7	5	9	28	14	4	S	11	5.3
19	2	7	2		2	2	9	6	68	29	7	1	13	22	16	5	S	10	8.6
20	2	2	1			2	8	18	57	22	8	10	18	13	17	5	S	8	12.4
21	4	2	2		1	8	25	21	35	25	9	9	13	14	7	4	S	8	14.4
22	4	1	1	1	2	15	43	26	21	11	3	4	16	12	9	6	SE	6	16.3
23	7	3			4	19	50	23	17	3	1	3	13	19	8	3	SE	6	17.2
24	7	1	1	2	2	13	49	36	11		1	4	13	12	10	7	SE	5	19.1

TABLE III-15  
Daily March of Wind Direction (1961-1967), October  
(Number of Observations)

Hour of Day (MST)	N	Direction														Previous Direction	Average Speed	% Total Obs Calm	
		NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
1	5	2	1		3	10	27	25	11	3	8	3	20	19	19	10	SE	7	19.8
2	6	1			3	7	19	23	15	4	6	6	15	17	21	7	SSE	5	27.5
3	6	2	1		1	5	22	17	17	3	4	2	21	17	25	9	NW	4	26.6
4	4	2	2	1	2	5	14	16	13	3	5	2	18	18	17	19	NNW	4	31.9
5	3	2		2	5	3	14	16	13	2	6	3	11	29	26	7	WNW	4	31.4
6	8	1		1	2	7	10	14	11	2	4	5	5	24	21	15	WNW	5	37.5
7	4	1			2	6	14	13	7	5	4	3	8	18	28	12	NW	4	39.9
8	6		1		3	8	12	9	3	3	2	2	10	17	21	15	NW	5	46.4
9	8	4			1	8	17	10	6	2	1		3	13	20	22	NNW	5	44.4
10	8	2	1		2	2	11	20	3	4		2	2	21	19	20	WNW	9	43.2
11	18	7	4	1	2	6	19	18	9	6	1		2	20	24	16	NW	8	25.7
12	13	3	2		2	4	13	21	19	7	4	4	12	22	22	21	NW	9	19.1
13	11	9	1		1	3	18	15	27	15	5	3	10	24	24	6	S	13	17.7
14	13	3	3	1	2	2	12	16	31	19	9	6	12	24	24	8	S	12	10.6
15	13	4	3	1	3	2	9	21	35	20	5	7	10	26	18	7	S	12	11.5
16	15	7	2		1	5	8	19	33	18	4	6	13	26	15	9	S	13	13.0
17	7	9	3		1	4	5	16	39	19	1	5	10	30	27	5	S	12	12.6
18	8	6	3	1	2	6	4	8	40	22	2	6	17	29	19	5	S	10	14.0
19	4	5	1	2	1	2	13	11	41	20	10	15	26	19	9	5	S	8	11.1

TABLE III-16

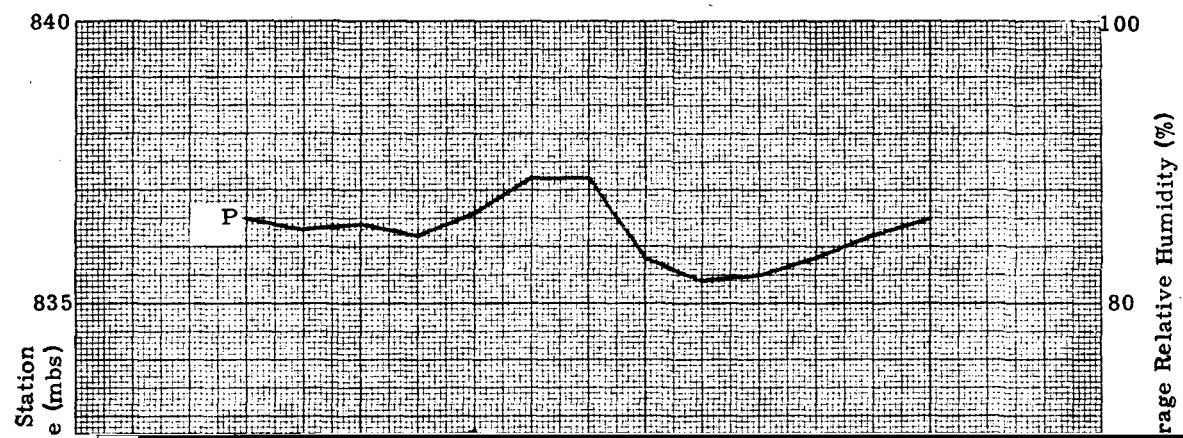
Daily March of Wind Direction (1961-1967), November  
(Number of Observations)

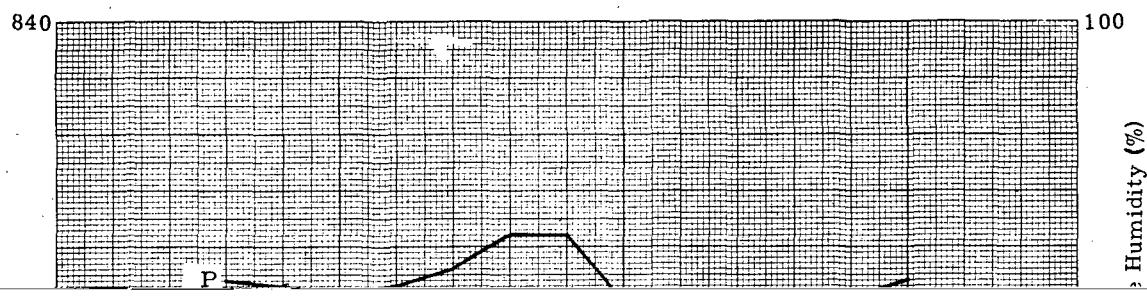
Hour of Day (MST)	<u>Direction</u>															Previous Direction	Average Speed	% Total Obs Calm		
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW				
1	7	3	1		1	7	17	29	19	5	1	1	9	26	15	13	SSE	8	26.0	
2	7	2	1		2	9	17	28	10	3	1	5	13	12	25	8	SSE	7	31.2	
3	4		3			8	16	21	10	1	1	8	16	20	15	10	SSE	8	36.1	
4	5	3			1	5	18	17	7	1	8	3	11	21	15	10	WNW	7	39.6	
5	5				2	5	18	15	14	2	6	6	10	22	12	9	WNW	7	39.1	
6	3	3	1		1	6	14	19	9	2	7	7	15	18	19	10	NW	6	35.3	
7	6		2		1	7	17	15	7	4	5	3	15	17	21	9	NW	5	37.7	
8	4	1	2	1	1	3	21	20	6	2	4	3	7	21	11	13	SE	6	42.3	
9	5	6	1			6	22	21	2	2	1	1	4	20	20	7	SE	6	43.3	
10	13	1			2	7	26	16	3	3			2	16	20	12	SE	8	41.8	
11	11	1	4	1	2	10	29	22	9	1			4	18	23	8	SE	7	31.9	
12	4	2	1		1	12	28	28	17	3	2	1	6	20	25	13	SSE	11	22.4	
13	5	3				6	25	30	25	8		2	5	22	30	7	SSE	11	20.0	
14	6	4	2			4	27	24	32	13	3	1	7	25	27	7	S	13	13.3	
15	7	2	1	1		3	16	26	39	10	4	2	7	33	22	9	S	14	12.9	
16	5	6	3	1	1	3	12	27	42	18	4	11	29	20	8	S	12	9.1		
17	5	5	1	4		4	13	24	41	15	4	2	13	31	18	9	S	11	9.6	
18	2	4	2			3	11	29	40	12	2	5	18	30	10	6	S	9	16.7	
19	5	4		1	2	5	13	27	35	17	12	14	22	17	9	2	S	7	11.5	
20	7	2	1	2	5	6	32	26	30	7	6	6	14	17	7	6	SE	6	16.7	
21	5	3		1	3	16	39	28	14	7	2	5	16	15	12	9	SE	6	16.3	
22	4	1		1	2	4	6	31	44	16		2	5	17	16	12	7	SSE	6	19.2
23	4		1			13	29	41	19	2	3	5	13	18	11	12	SSE	7	17.8	
24	8	3	1	1	2	8	27	34	16	2	2	2	14	21	14	8	SSE	7	21.6	

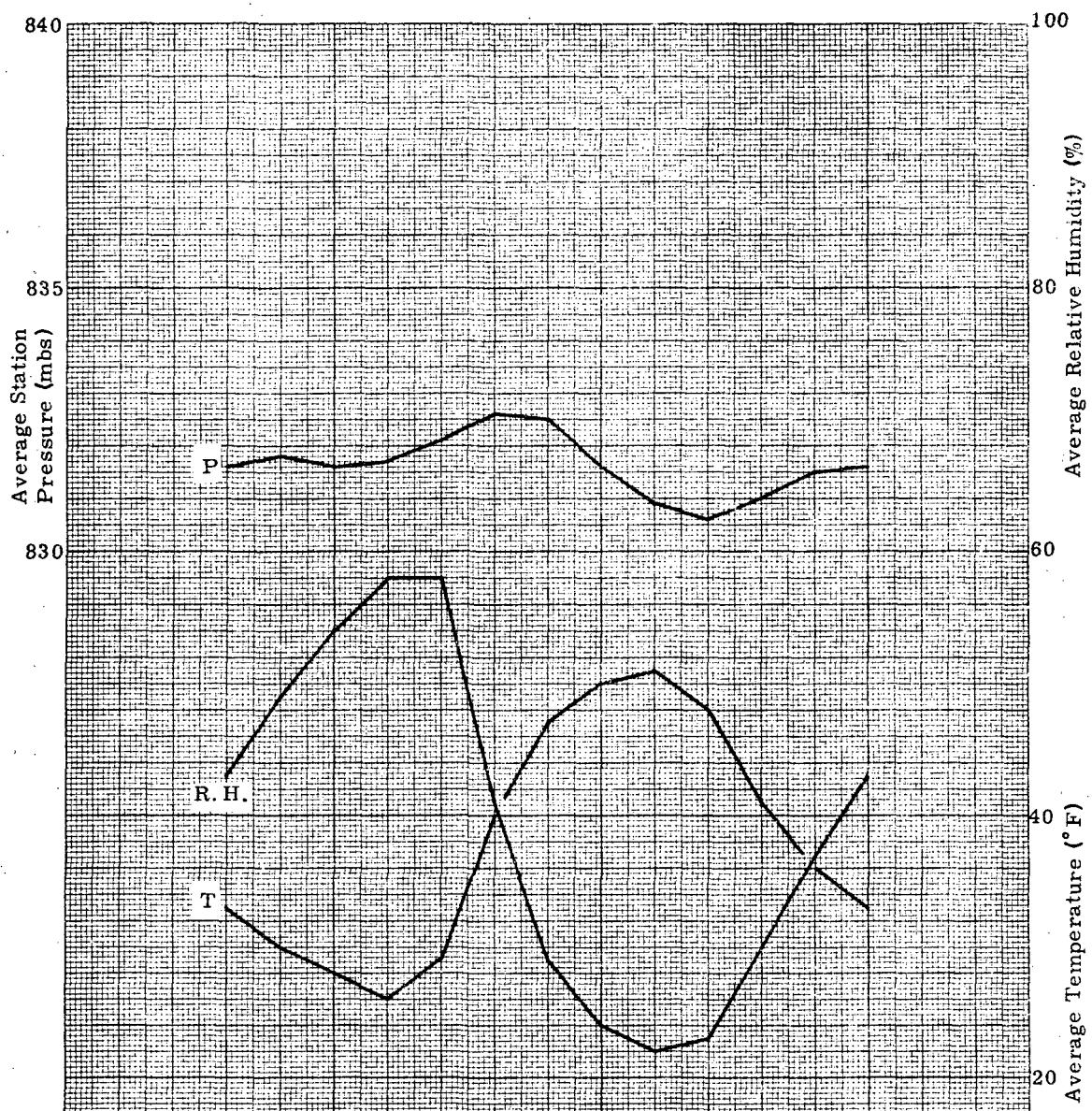
TABLE III-17

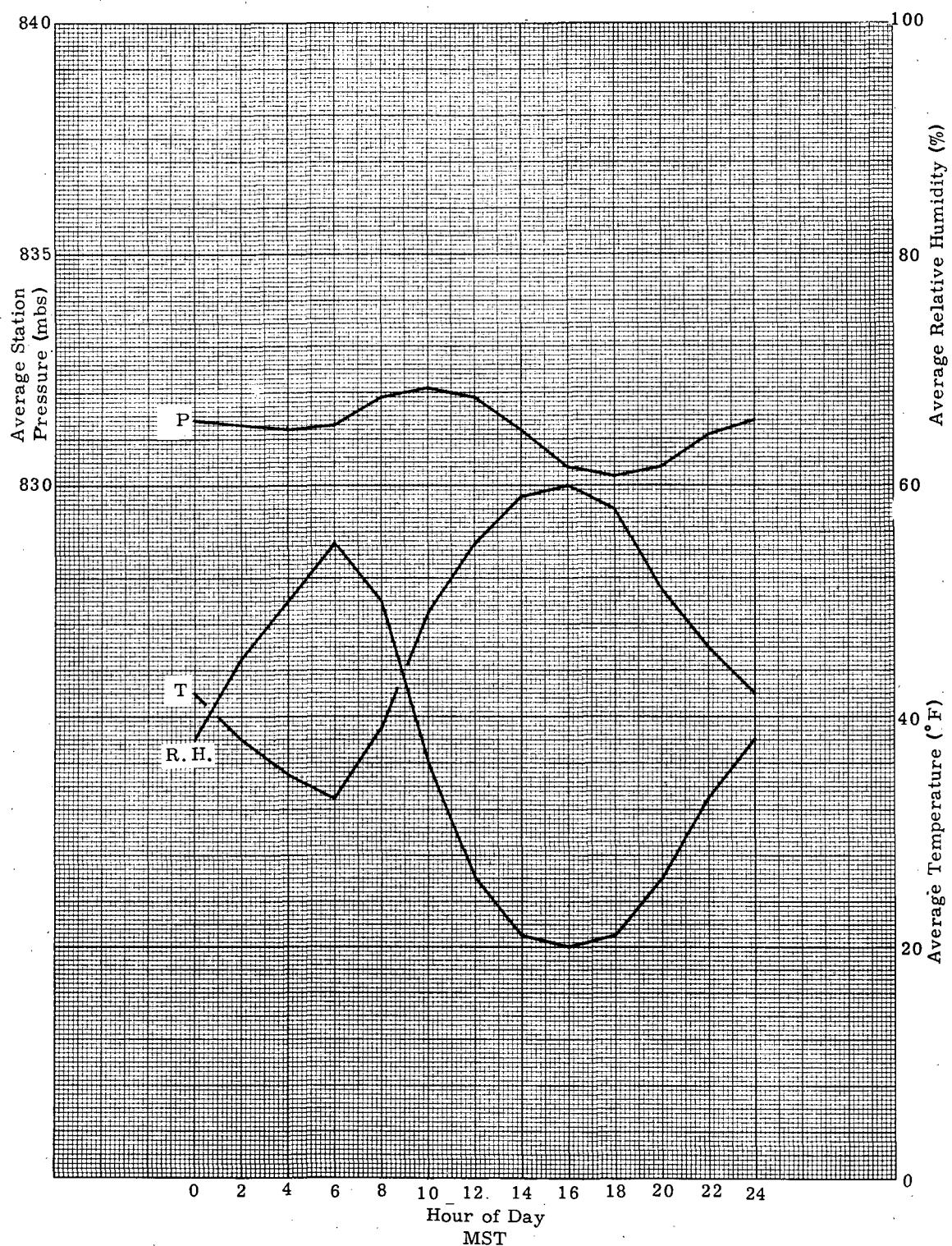
Daily March of Wind Direction (1961-1967), December  
(Number of Observations)

Hour of Day (MST)	Direction															Previous Direction	Average Speed	% Total Obs Calm	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
1	10	4	1			6	17	22	8	2	1	4	14	23	16	12	WNW	7	34.9
2	12	3	1		2	2	15	17	9	3	2	2	8	30	17	16	WNW	7	34.7
3	9	2	1		2	4	17	14	12	2		6	9	23	20	17	WNW	7	34.9
4	4	1		1	2	13	16	9	3	3	2	13	24	26	19	NW	6	35.8	
5	9	3	1	1	1	20	18	12			2	14	24	15	16	WNW	7	35.8	
6	7	2	1	1	4	20	17	7	1	1	2	8	23	21	16	WNW	7	38.2	
7	10	3		1	1	2	12	16	9	2	2	1	9	23	21	10	WNW	7	42.5
8	12	3	1		5	2	13	17	10	3	2	2	13	18	23	9	NW	6	37.3
9	9			1	3	17	11	12	3	1	3	7	18	24	17	NW	6	40.3	
10	13	6	1		4	8	23	11	5	3	1	2	7	20	17	12	SE	6	37.6
11	11	2	3	1	4	3	16	11	10	2	2	1	8	22	21	21	WNW	9	36.4
12	9	6	2		5	4	22	13	7	3	4	1	9	30	29	12	WNW	9	28.1
13	8	5	1		4	23	16	10	8	1	14	35	35	16		NW	7	18.9	
14	11	6	1	1	5	18	15	14	5	2	2	7	41	43	7	NW	7	18.0	
15	9	4	1		1	5	13	15	20	7	2	11	44	41	8	WNW	9	16.6	
16	8	4	2			6	11	16	19	7	2	1	13	44	40	4	WNW	8	18.4
17	5	3	2			2	11	24	15	10	1	4	26	30	38	NW	9	18.0	
18	4	3	2			2	13	12	22	9	4	13	33	36	20	5	WNW	9	18.0
19	5	3		1	1	3	14	16	19	7	10	14	36	19	18	W	7	19.4	
20	11			1	2	4	27	25	10	4	4	6	24	29	12	8	WNW	7	22.3
21	13	1		1	1	3	19	19	19	2	3	7	19	30	17	9	WNW	6	24.5
22	9	5	1	1	1	5	23	20	7	5	2	2	18	26	21	10	WNW	7	26.8
23	11	1	2	1	3	3	20	15	7	5	2	3	16	27	27	13	WNW	7	26.8
24	13	1		1		3	19	17	6	6	4	4	18	19	22	11	NW	6	32.7

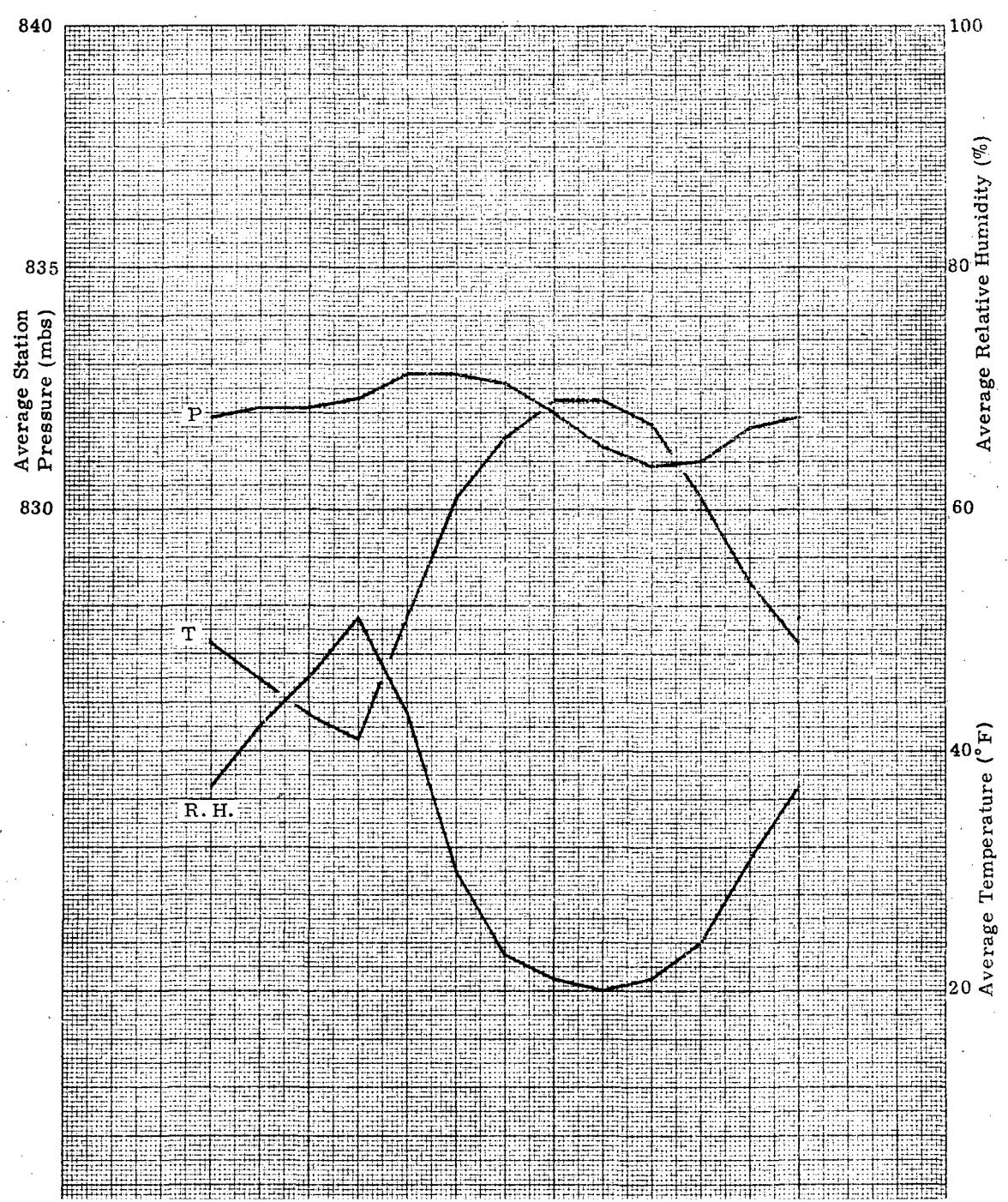


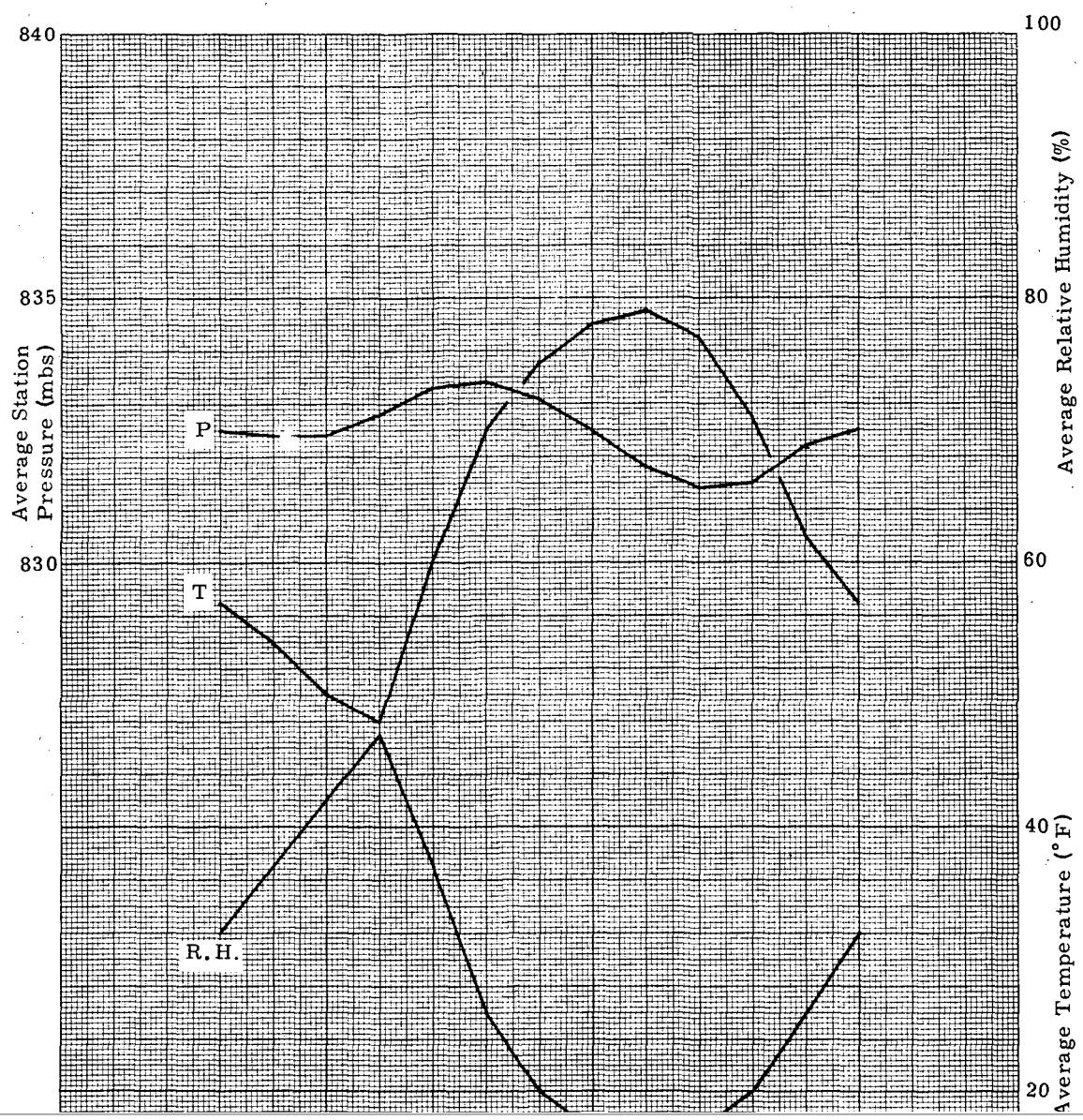


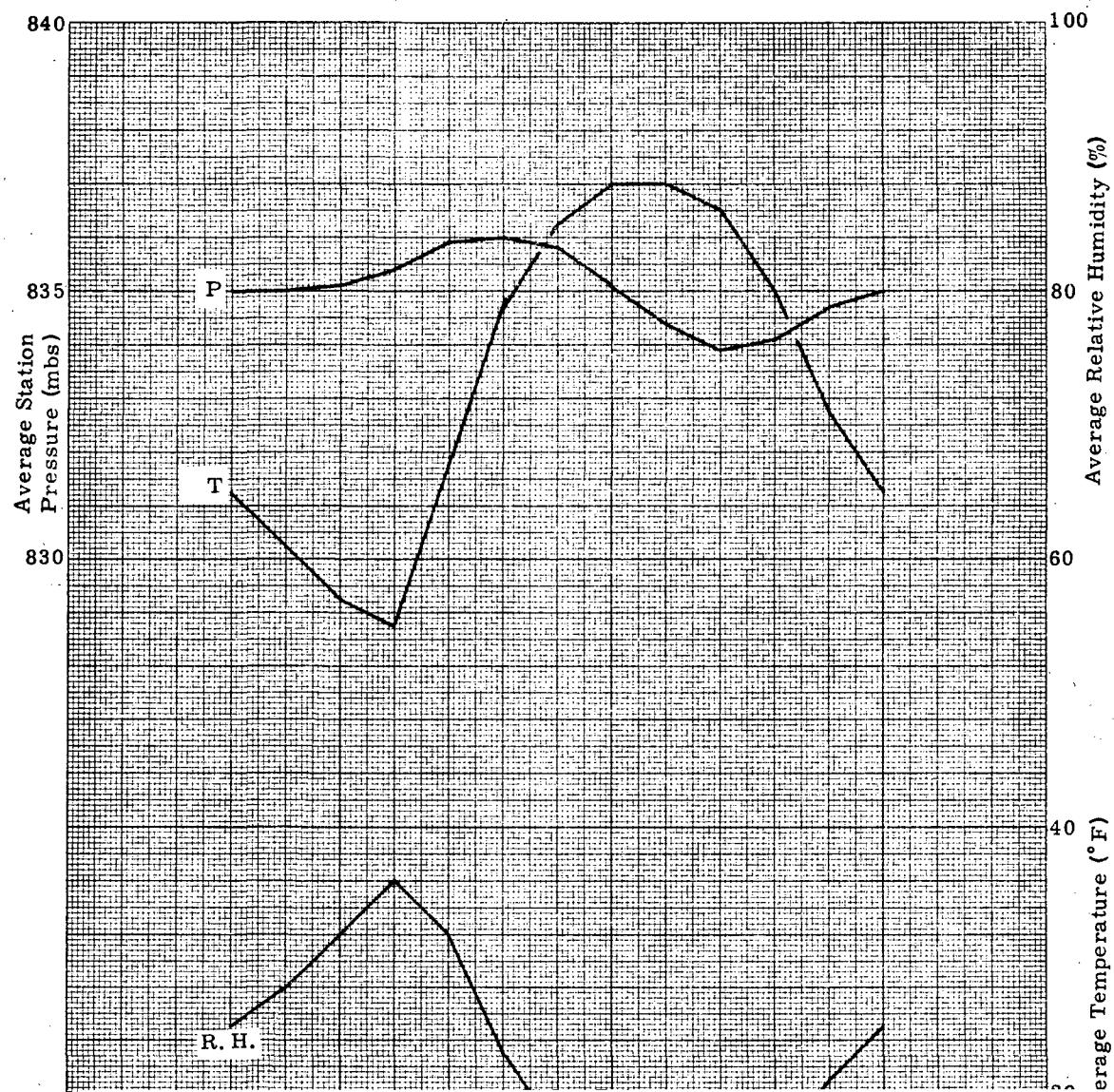


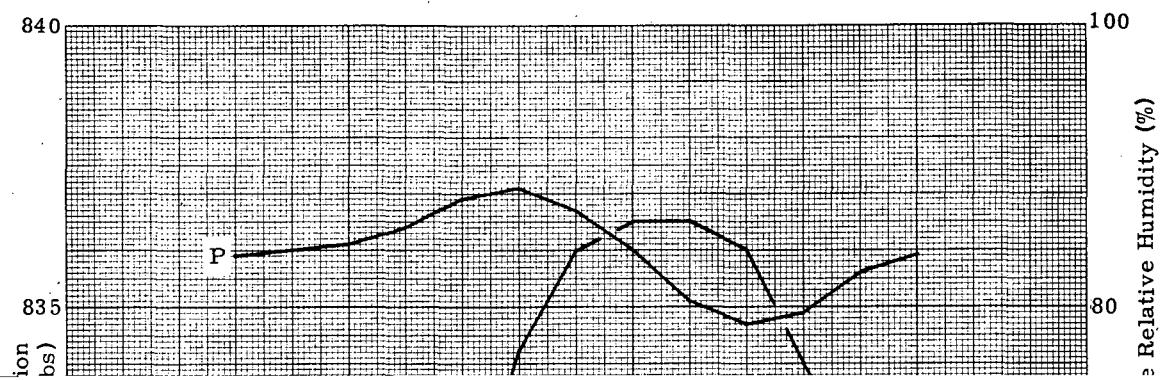


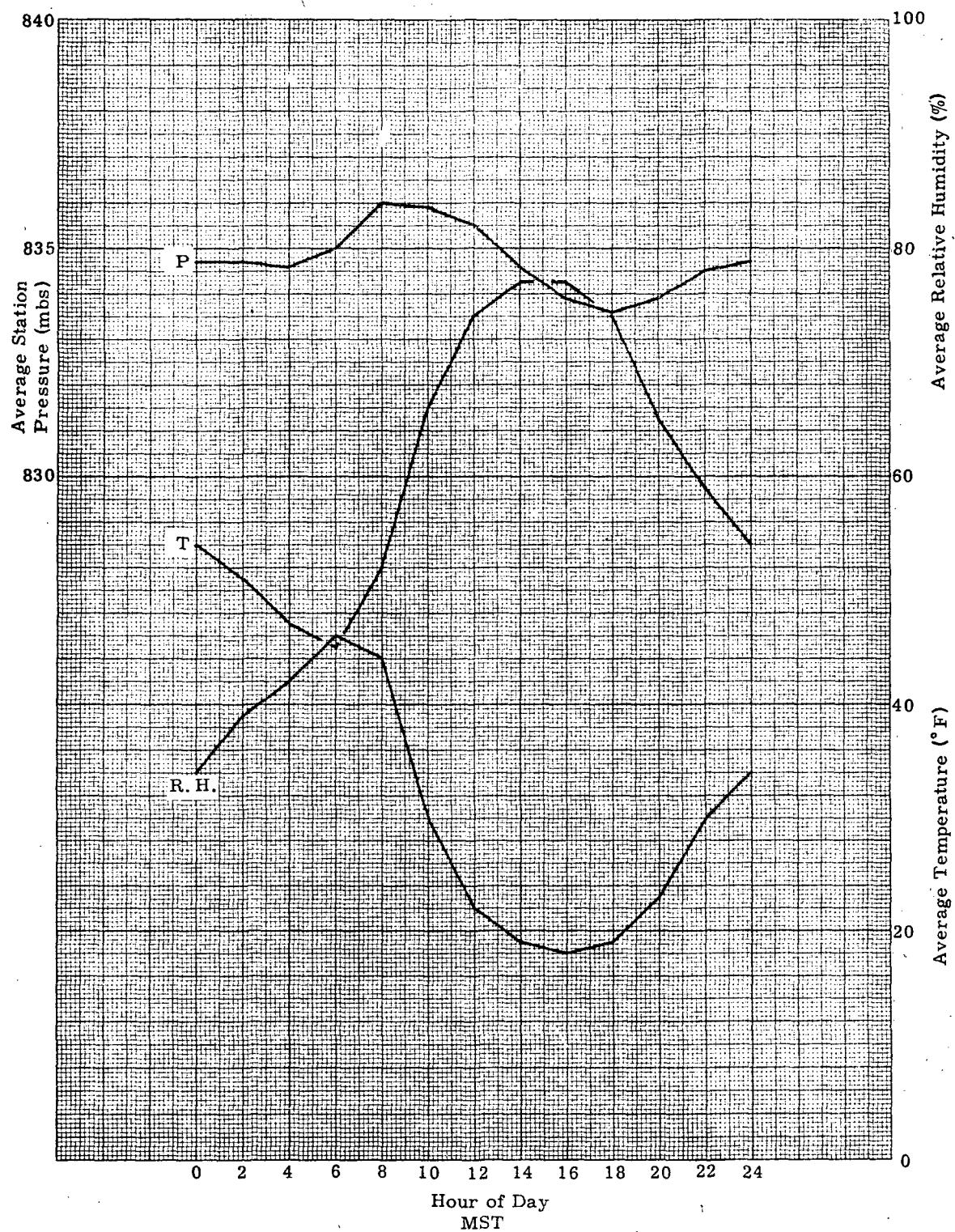
Graph III-4. Daily March of Temperature, Relative Humidity, and Station Pressure, 7-Year Averages (1961-1967), April



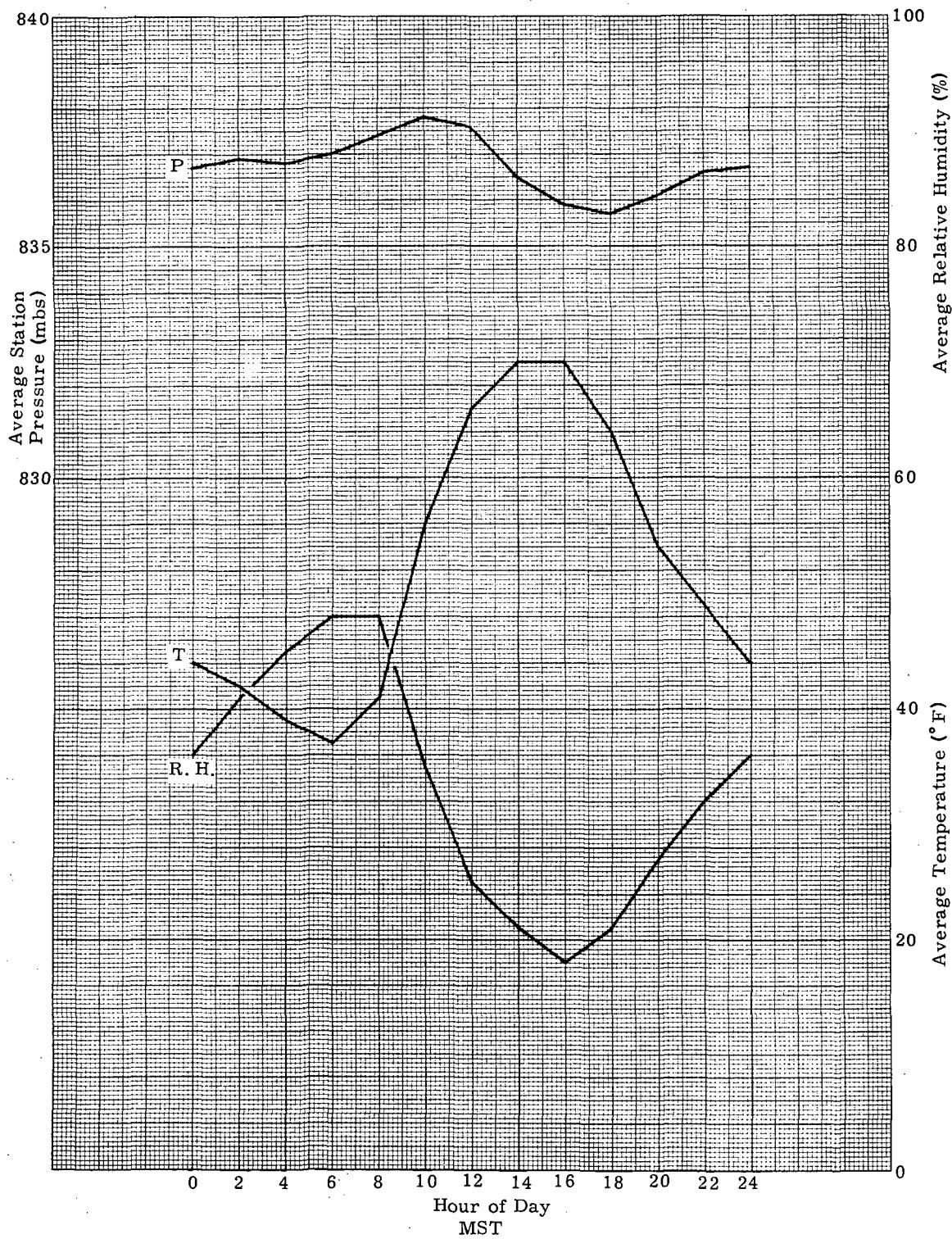








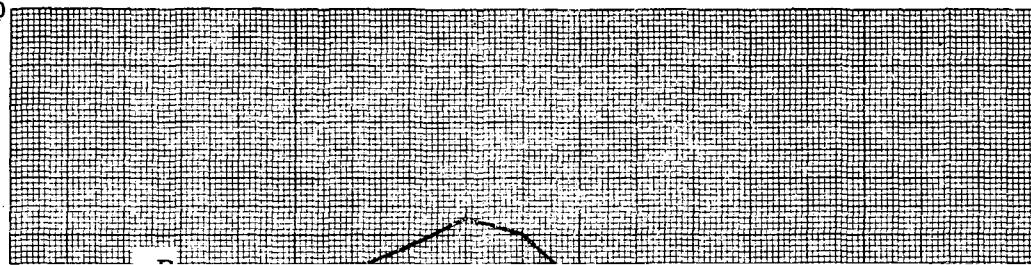
Graph III-9. Daily March of Temperature, Relative Humidity, and Station Pressure,  
7-Year Averages (1961-1967), September



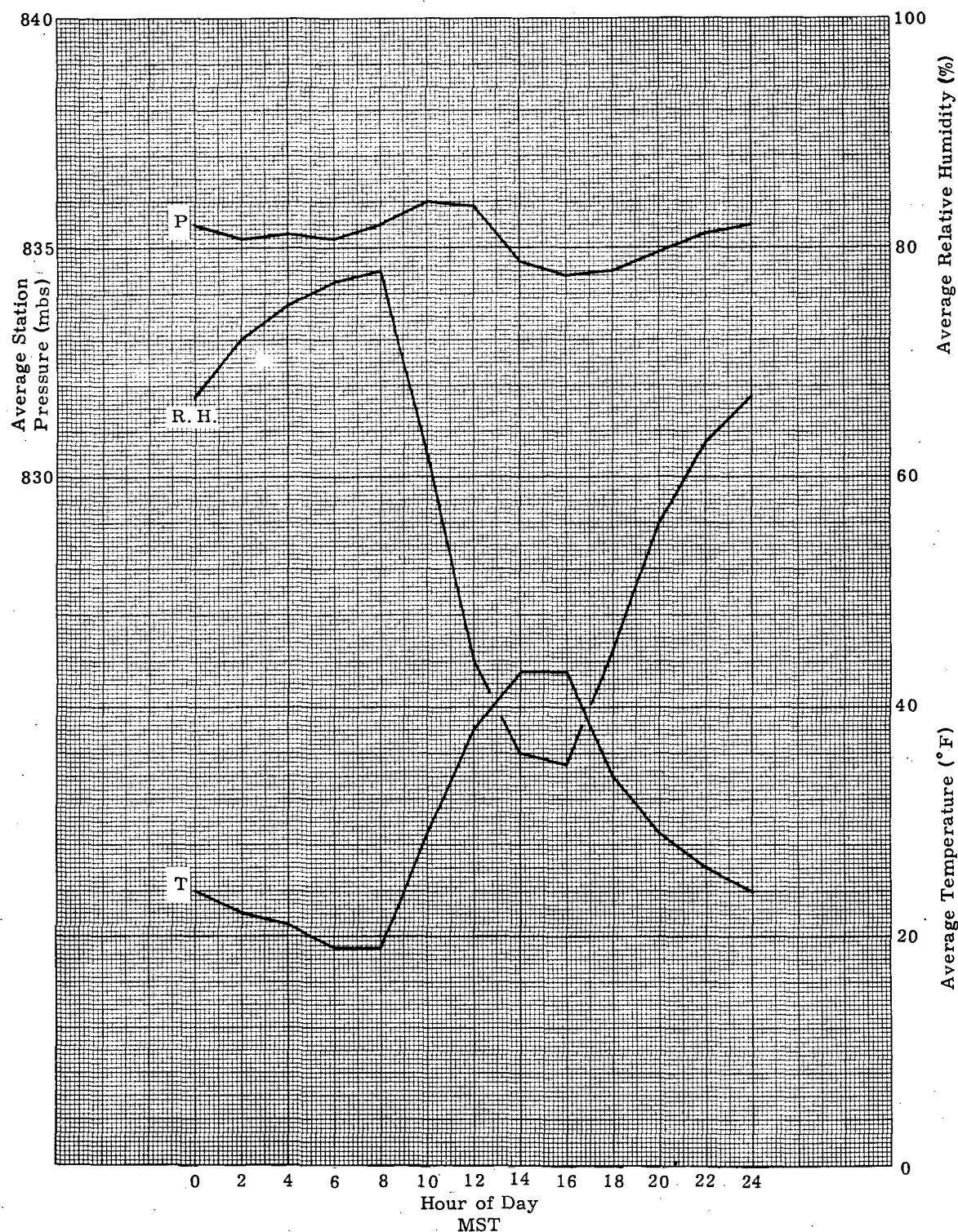
Graph III-10. Daily March of Temperature, Relative Humidity, and Station Pressure, 7-Year Averages (1961-1967), October

840

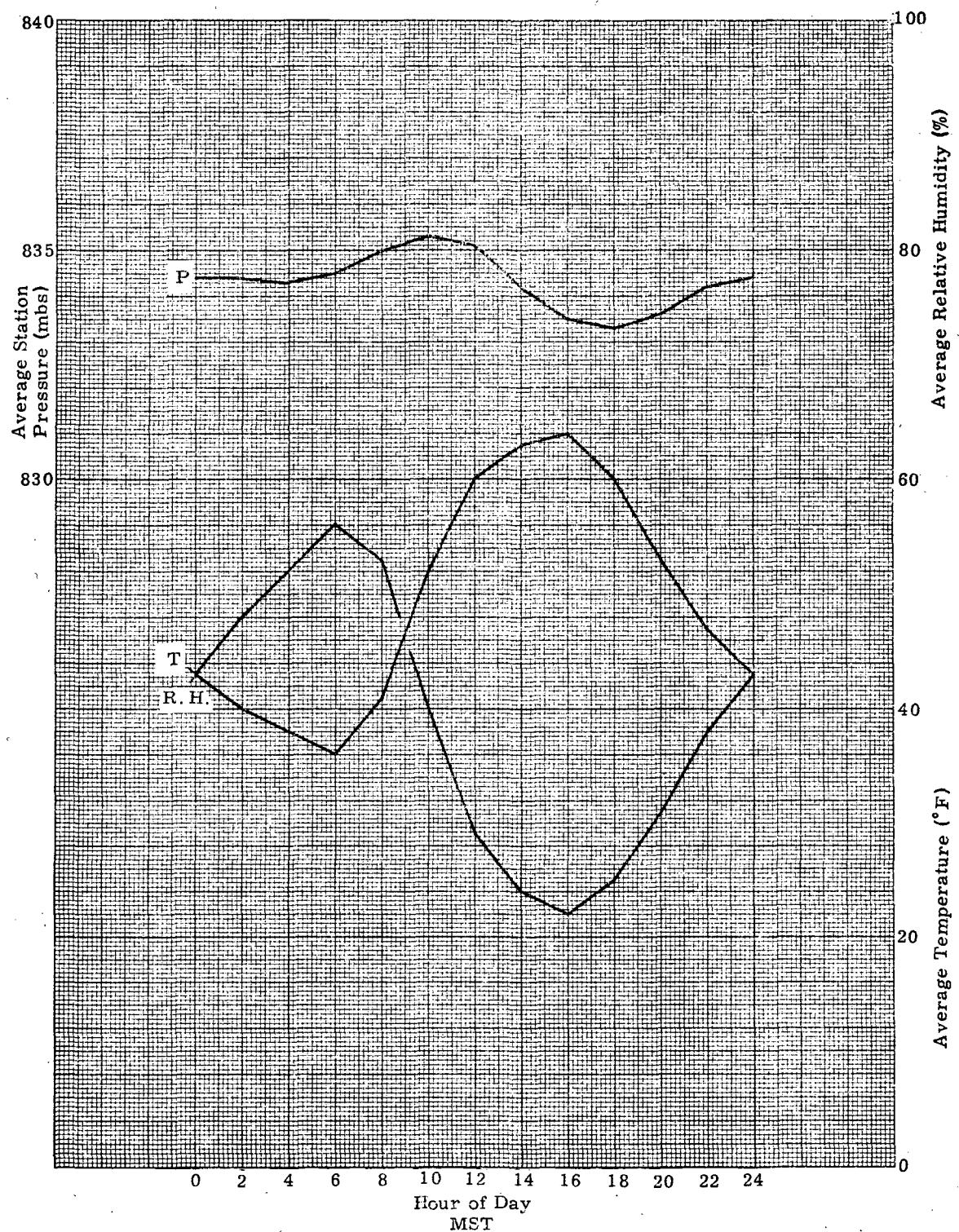
100



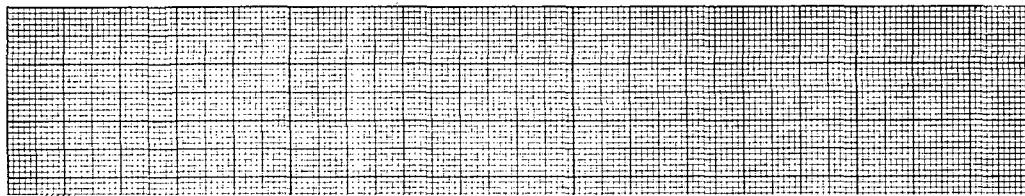
humidity (%)

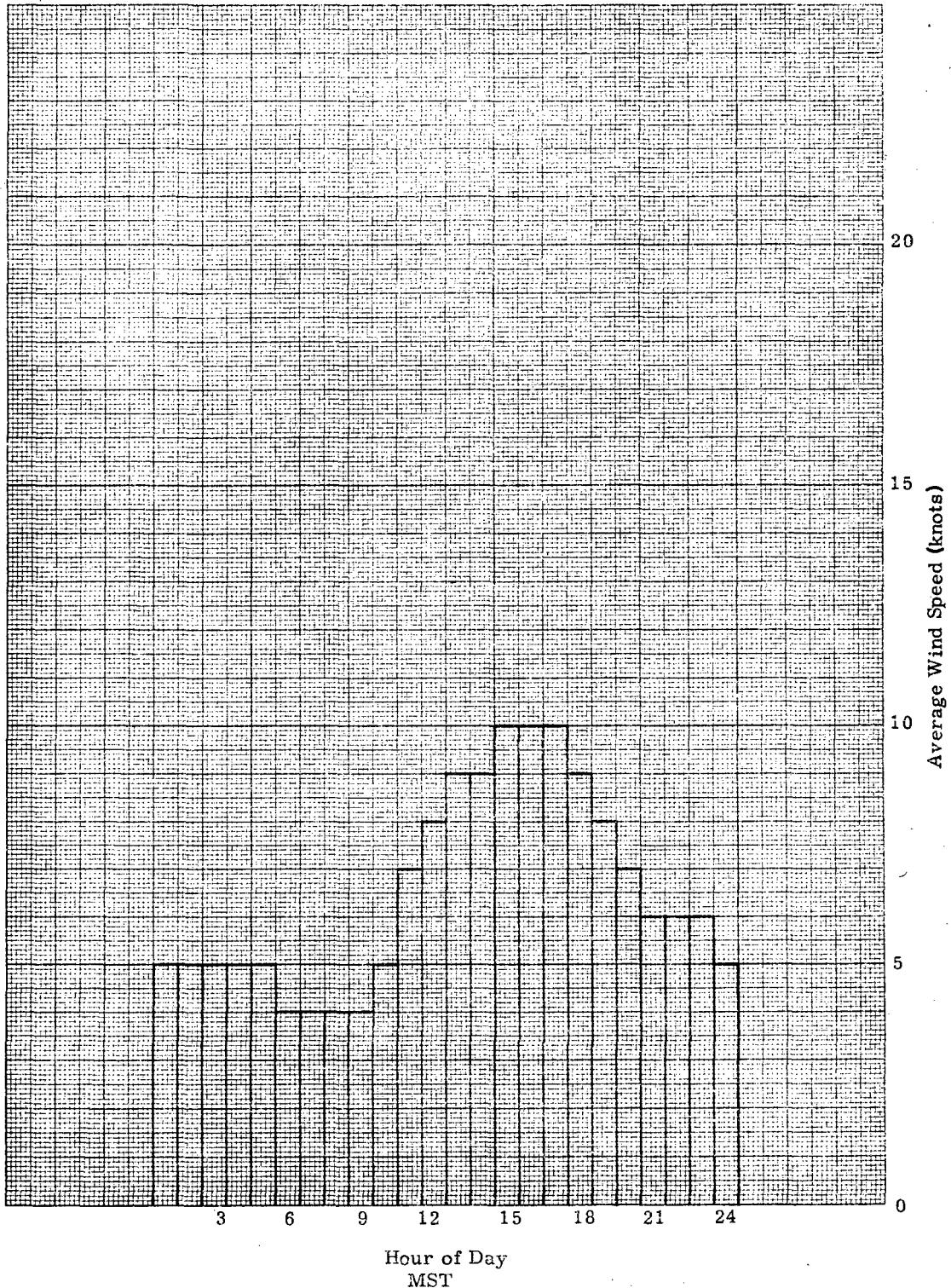


Graph III-12. Daily March of Temperature, Relative Humidity, and Station Pressure, 7-Year Averages (1961-1967), December

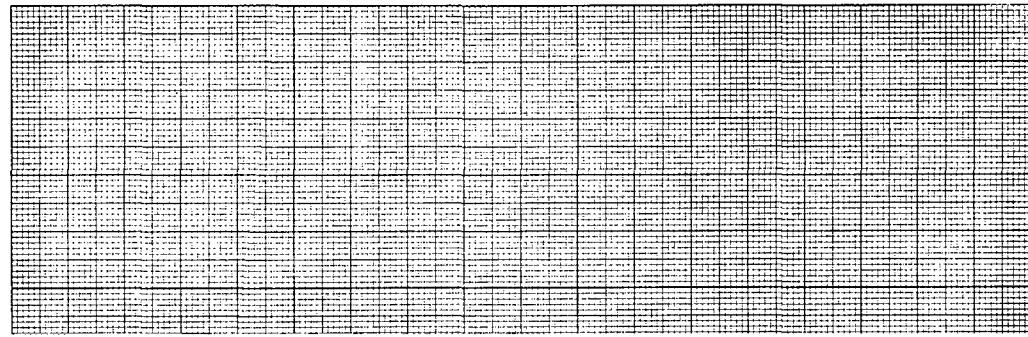


Graph III-13. Daily March of Temperature, Relative Humidity, and Station Pressure,  
7-Year Averages (1961-1967), Year

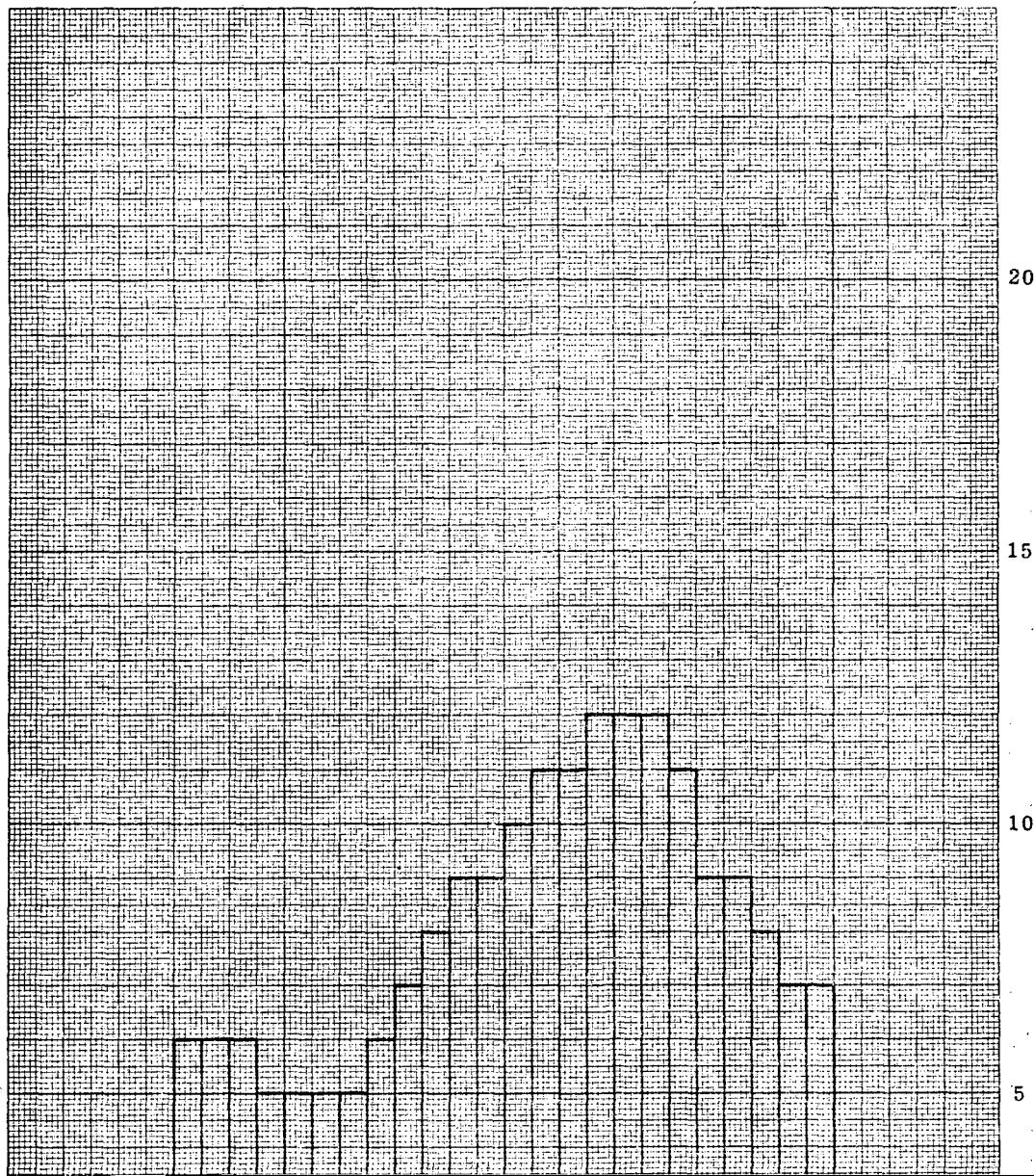




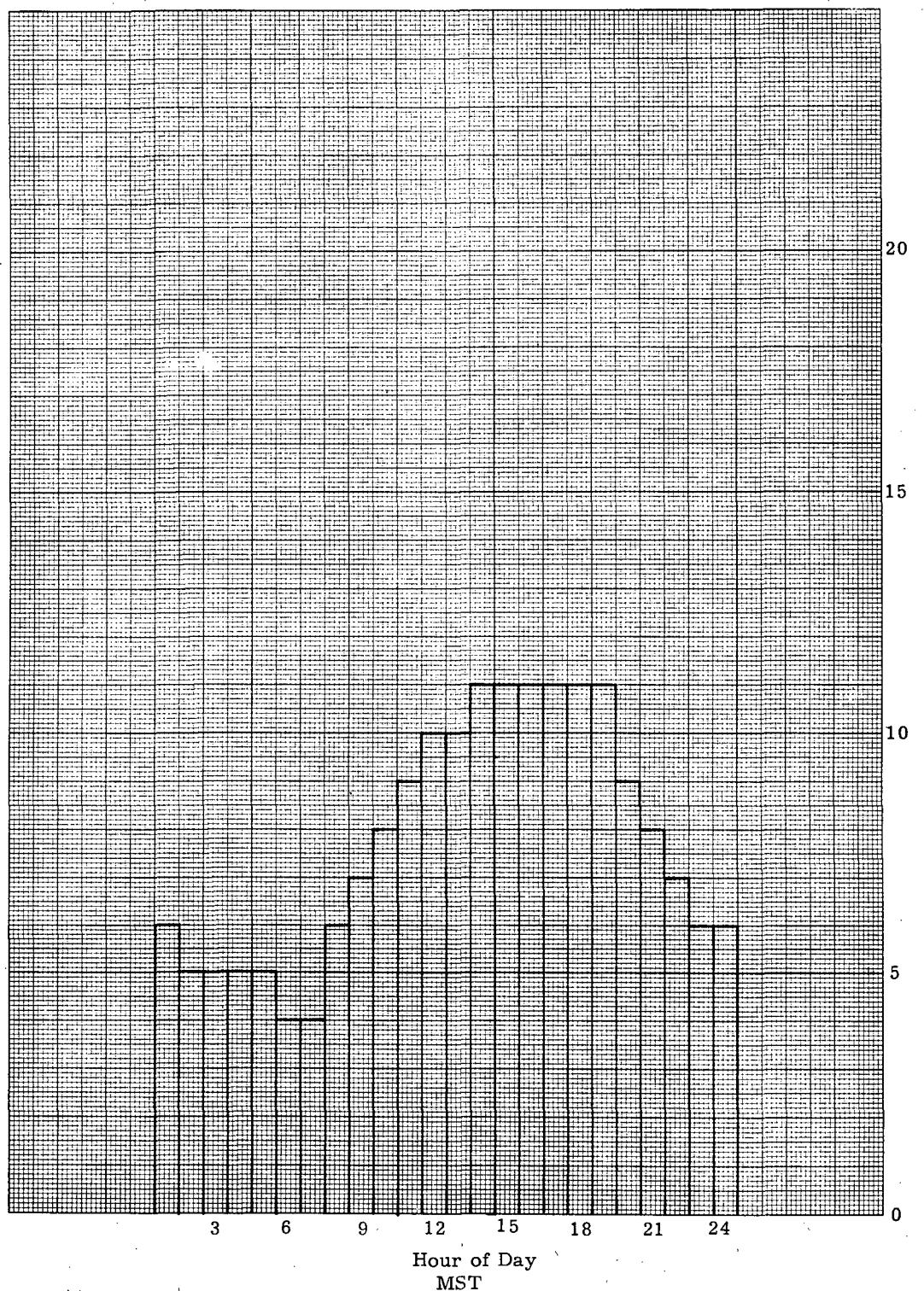
Graph III-15. Daily March of Wind Speed, 7-Year Averages (1961-1967), February



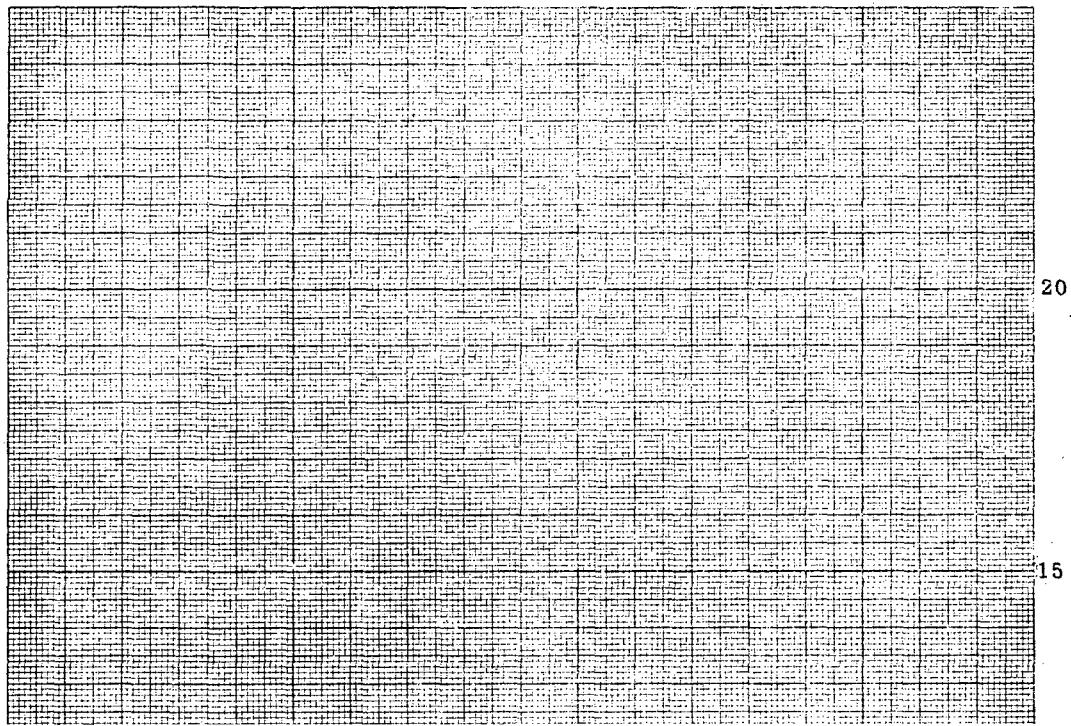
20



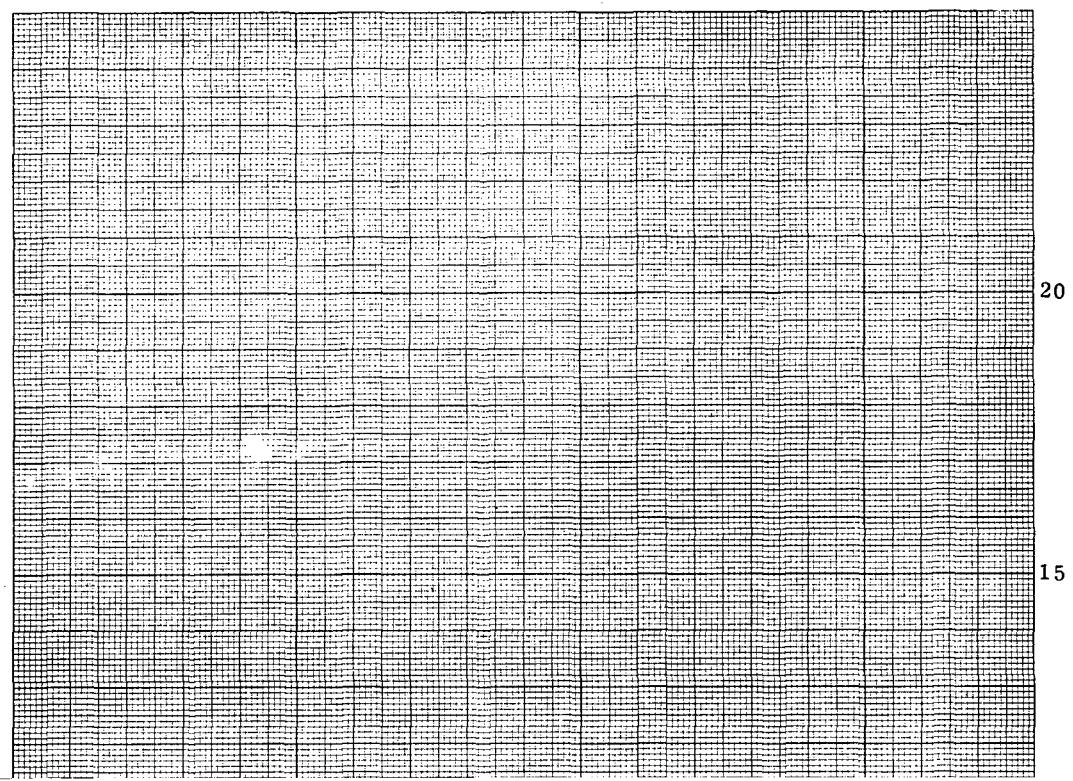
Average Wind Speed (knots)



Graph III-18. Daily March of Wind Speed, 7-Year Averages (1961-1967), May



1 Speed (knots)

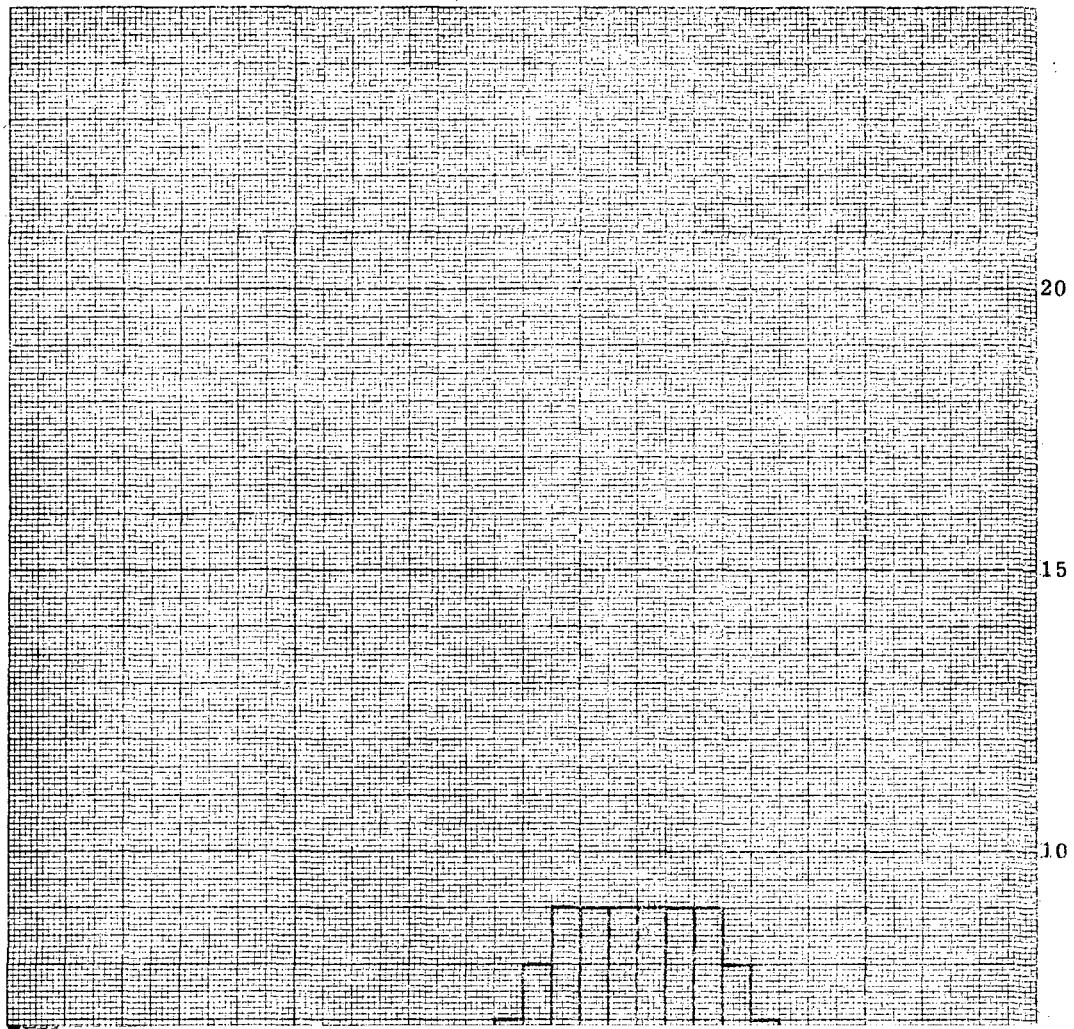


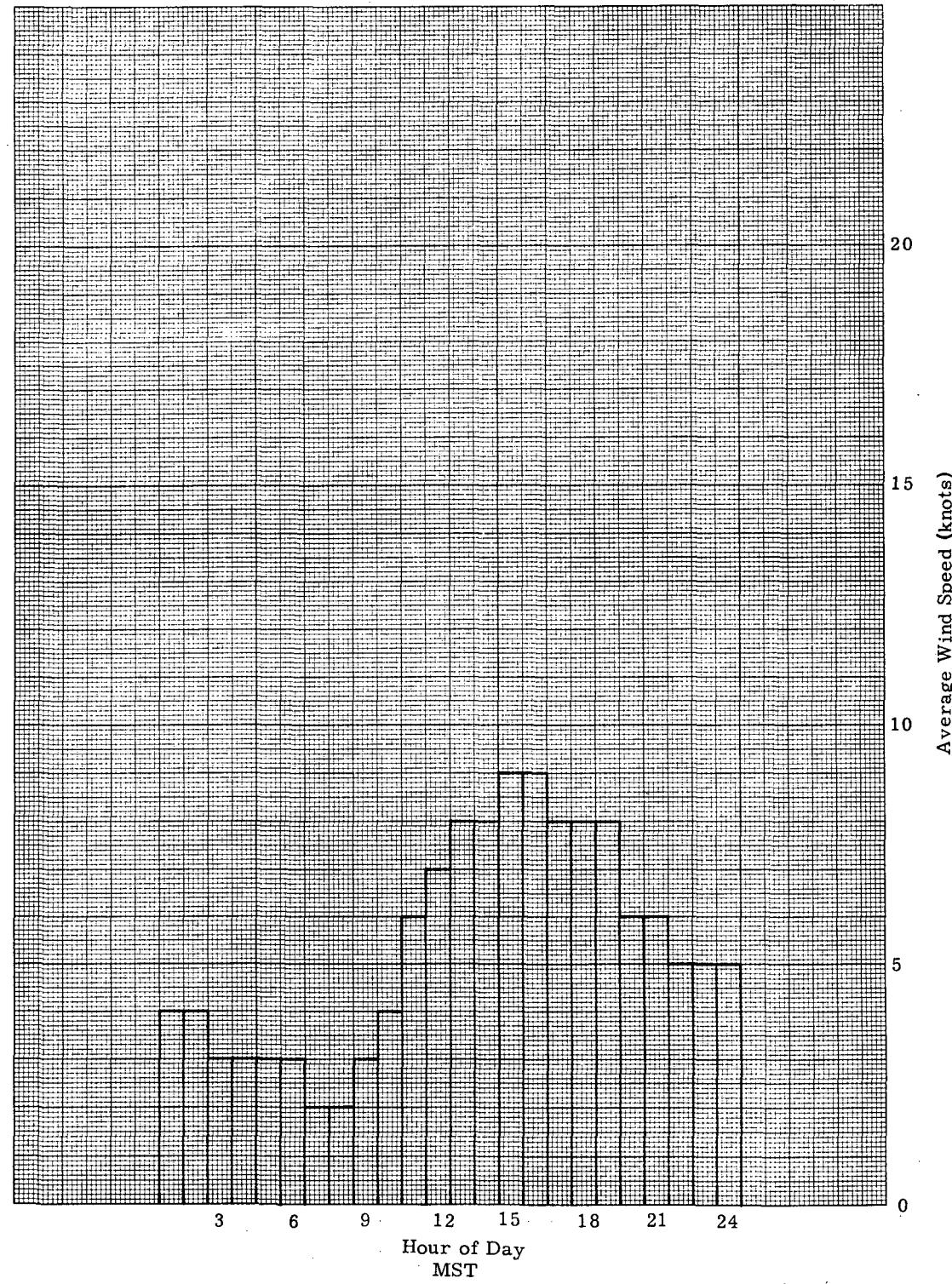
Wind Speed (knots)

20

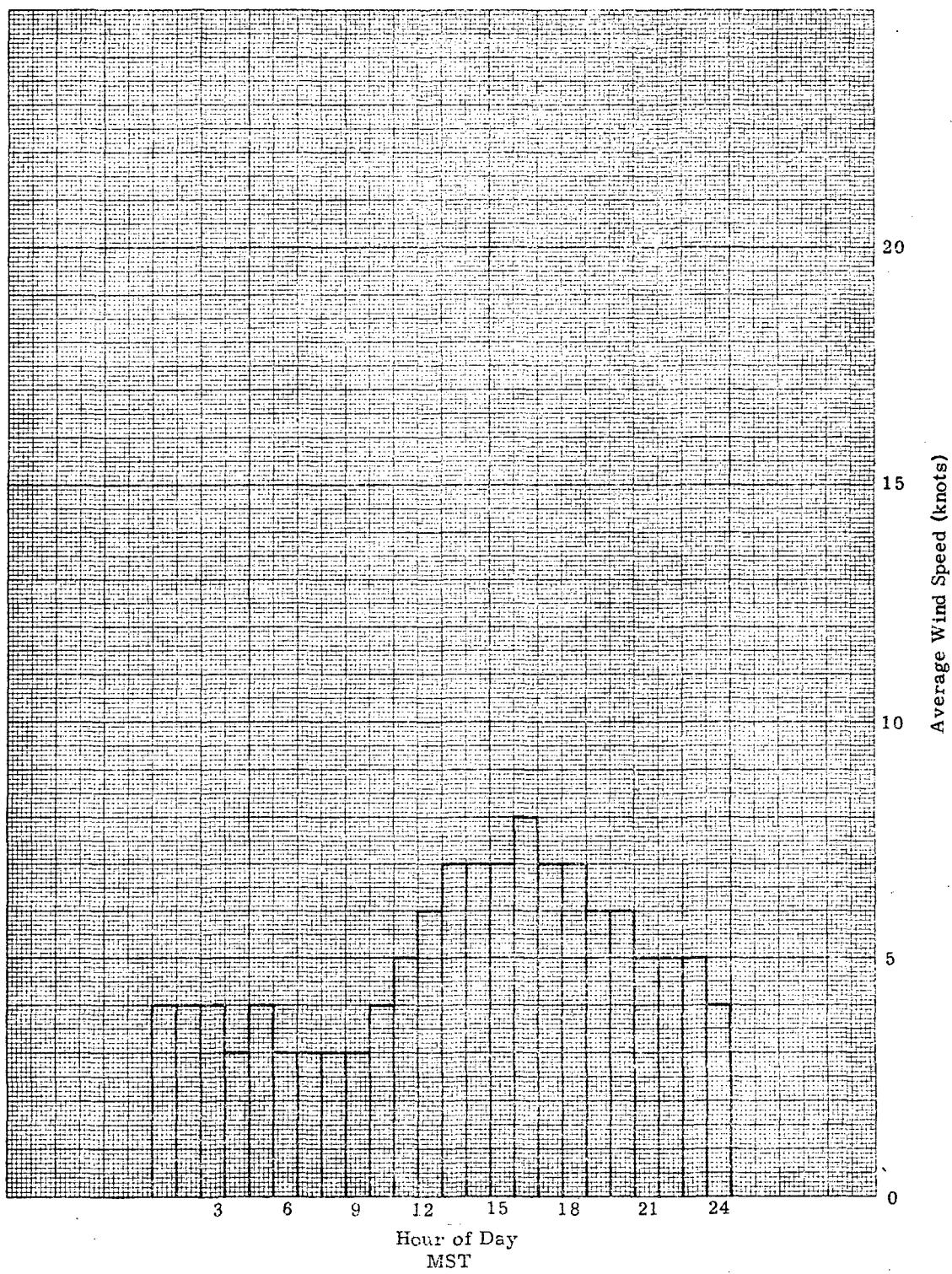
15

Average Wind Speed (knots)

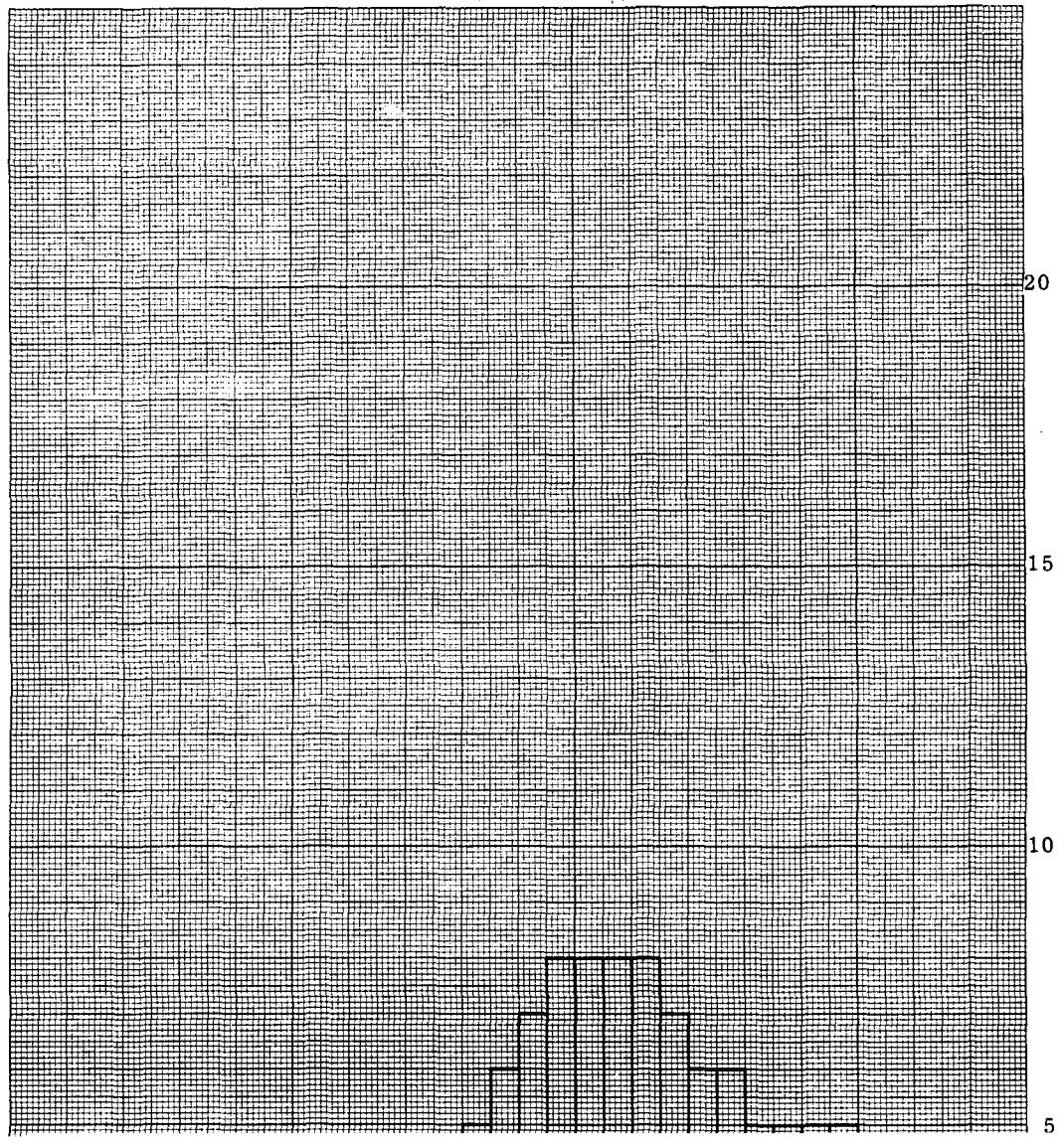


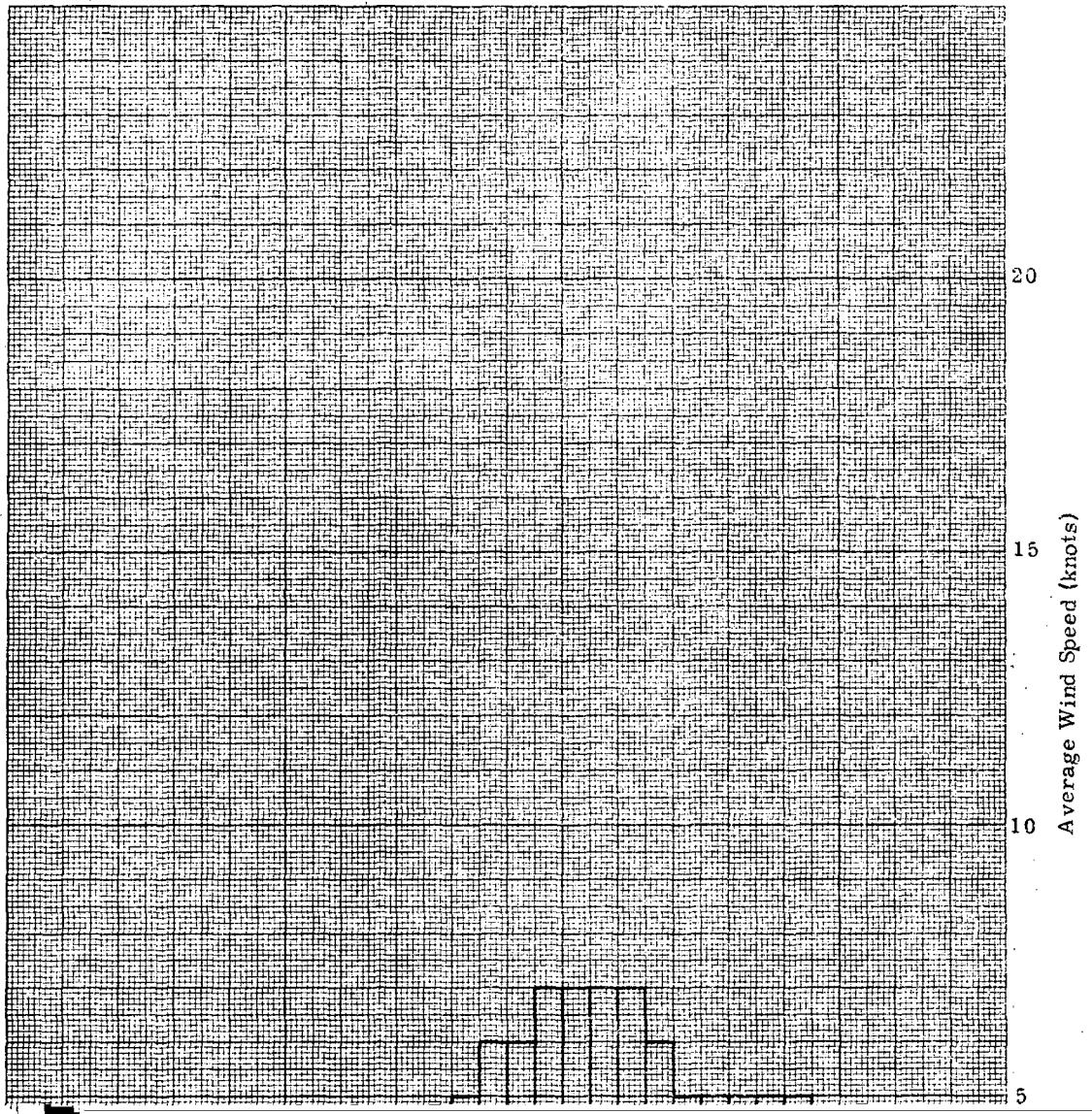


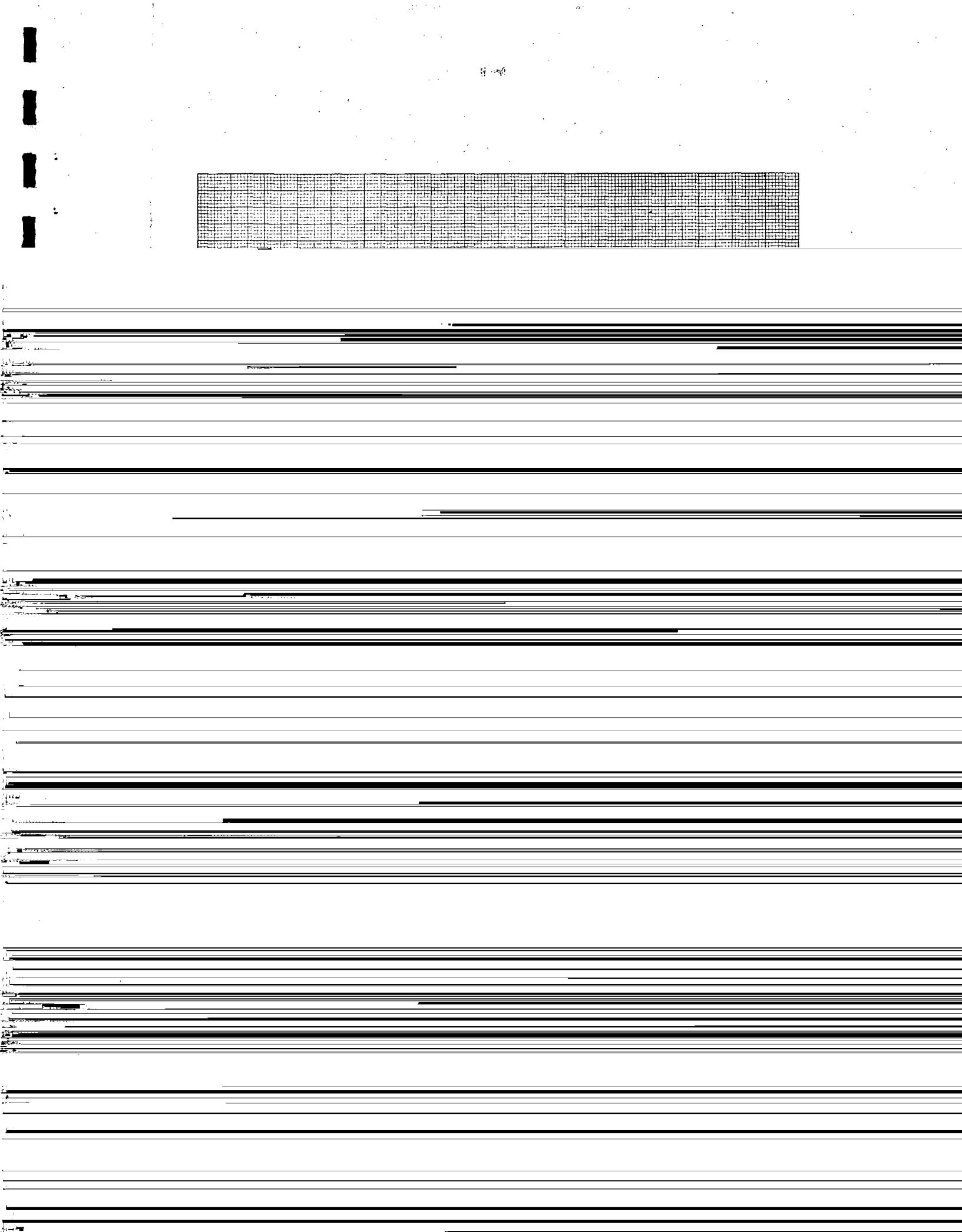
Graph III-22. Daily March of Wind Speed, 7-Year Averages (1961-1967), September



Graph III-23. Daily March of Wind Speed, 7-Year Averages (1961-1967), October







Part IV  
SUMMARIES OF UPPER WINDS, 1961-1967

TABLE IV-1

Upper Winds (1961-1967), January  
(Percent Frequency and Average Speed)

Direction (degrees)	350-	020-	050-	080-	110-	140-	170-	200-	230-	260-	290-	320-	Total Obs
	010	040	070	100	130	160	190	220	250	280	310	340	
Altitude (K ft)	<i>360</i>	<i>030</i>	<i>060</i>	<i>090</i>	<i>120</i>	<i>150</i>	<i>180</i>	<i>210</i>	<i>240</i>	<i>270</i>	<i>300</i>	<i>330</i>	
100	%			50	50								2
95	%			100									3
90	%		11	22	22						11	11	22
85	%	13	7	27	20						13	20	15
80	%	13	25	33	4	4					8	8	24
75	%	15	11	30	11						26		27
70	%	21	18	16	3	3			3	3	8	16	11
65	%	18	20	4			2		2	4	12	23	16
60	%	10	9	3					1	6	27	26	19
	Av	20	18	16					12	24	22	25	17
55	%	3	1	1	1				1	5	36	28	24
	Av	20	20	12	6				25	22	29	31	22
50	%	5			1	1				17	28	34	14
	Av	30			10	8			38	45	38	32	98
45	%	4	1	1	1				1	9	34	32	17
	Av	33	13	18	16				23	48	53	44	106
40	%	6	1	1	2	1			1	3	10	29	27
	Av	33	65	33	24	29			22	50	59	51	54
35	%	11	5	2	2	3			2	5	8	20	23
	Av	54	38	39	8	30			21	48	64	58	66
30	%	11	5	2	2	2			4	2	11	18	23
	Av	54	31	47	25	15	36		26	78	71	47	55
25	%	8	3	3	2	3	2		1	6	13	13	26
	Av	44	34	42	21	20	22		25	36	54	44	45
20	%	8	5	6	2	2	2		2	3	10	16	24
	Av	33	26	28	19	24	20		22	36	45	38	40

TABLE IV-2

Upper Winds (1961-1967), February  
(Percent Frequency and Average Speed)

Direction (degrees)	350- 010	020- 040	050- 070	080- 100	110- 130	140- 160	170- 190	200- 220	230- 250	260- 280	290- 310	320- 340	Total Obs
<b>Altitude (K ft)</b>													
100	%			20	20				20		20		5
95	%	11	22	11	22	11					11	11	9
90	%			8	15	46			15		8	8	13
85	%			6	24	41	6	6			6	12	17
80	%	12	15	35	23	4	4				8	26	
75	%	8	27	31	12	8					15	26	
70	%	22	7	19	7					7	19	19	27
65	%	18	12	6	4				6	6	29	18	49
60	%	7	8	3						7	25	33	18
	Av	18	19	25						16	21	22	61
55	%	7	5						4	2	30	38	13
	Av	25	30						33	9	31	28	82
50	%	6							3	6	34	26	24
	Av	37							31	24	39	42	96
45	%	6	2							12	28	33	19
	Av	34	28							51	49	49	103
40	%	8	1	1		1			3	7	29	32	18
	Av	41	23	18		17			32	57	55	56	107
35	%	9	6			2	1	1	4	11	20	19	27
	Av	58	30			22	8	30	39	64	62	56	110
30	%	15	4	2	1	2	1	3	5	12	14	19	23
	Av	50	65	36	13	15	13	37	34	63	56	44	111
25	%	12	4	3		1	1	2	6	13	16	19	24
	Av	48	53	32		14	8	32	28	49	43	42	112
20	%	18	4	1				2	7	9	20	19	21
	Av	44	24	33				16	33	35	34	33	114
15	%	18	7	1		2		2	10	11	13	18	19
	Av	36	29	29		8		6	19	27	25	29	113
10	%	16	13		1	3	1	6	15	6	4	10	25
	Av	24	22		22	5	4	23	20	14	15	23	110
7	%	22	6			5	13	18		1	2	12	20
	Av	13	12			7	12	15		10	12	17	94

TABLE IV-3  
Upper Winds (1961-1967), March  
(Percent Frequency and Average Speed)

Direction (degrees)	350- 010	020- 040	050- 070	080- 100	110- 130	140- 160	170- 190	200- 220	230- 250	260- 280	290- 310	320- 340	Total Obs
<b>Altitude (K ft)</b>													
100	%			25					25		50		4
95	%			20	20				20	20	20		5
90	%			38	12				12		38		8
85	%			23	23	8				15	15	15	13
80	%	5		15	25	5			5	10	20	10	20
75	%			7	7	19	7			4	26	15	11
70	%	10	10	10	3	3	3	3	7	20	17	10	3
65	%	6	2	2	2		2	4	2	13	46	6	15
60	%	2	2				2	2	6	17	44	16	10
	Av	13	12				12	18	23	22	24	26	18
55	%	1		1			1		4	24	46	15	8
	Av	25		9			4		14	28	36	26	20
50	%			1	1				1	22	48	20	7
	Av			15	8				58	42	38	31	41
45	%	3	1						3	19	41	22	11
	Av	24	24						51	50	48	44	38
40	%	5	3		2				5	23	29	26	8
	Av	45	31		22				48	58	59	52	48
35	%	3	6	2	3		1	1	6	22	24	18	14
	Av	49	29	25	32		23	65	40	66	62	62	58
30	%	5	6	5	5		1	2	7	18	18	18	15
	Av	44	41	39	26		42	41	50	64	56	60	60
25	%	1.0	5	4	4		1	1	7	20	17	17	15
	Av	37	32	44	25		39	15	50	52	52	54	50
20	%	9	6	4	2		2	3	7	18	18	15	16
	Av	31	28	31	23	0	15	33	35	39	45	48	42
15	%	11	5	3	2	2	2	5	7	11	17	12	23
	Av	23	27	26	16	20	7	27	23	32	36	30	36
10	%	13	4	2	2	1	7	10	12	9	12	11	17
	Av	18	26	11	18	11	16	17	22	17	23	22	23
7	%	11	8		5	4	13	17	6	3	6	10	17
	Av	11	12		8	11	14	17	19	10	18	18	18

TABLE IV-4  
Upper Winds (1961-1967), April  
(Percent Frequency and Average Speed)

Direction (degrees)	350- 010	020- 040	050- 070	080- 100	110- 130	140- 160	170- 190	200- 220	230- 250	260- 280	290- 310	320- 340	Total Obs
<b>Altitude (K ft)</b>													
100	%				25				25	25	25		4
95	%				25	25			25	25			4
90	%			14	29	14					43		7
85	%	10			30	10		10		30	10		10
80	%			13	20	13		7	7	27	7		15
75	%	5	5		5	33	10		5	14	14	5	21
70	%	12			4	19	4	12		19	4	19	4
65	%	8			5	8	3	11	5	5	19	8	37
60	%	3	5		2	2	2	3	22	20	27	8	7
	A v	19	10		8	10	17	16	18	28	22	17	14
55	%				1				14	28	41	10	5
	A v				6				24	29	26	26	21
50	%				1			1	1	13	32	33	9
	A v				27			6	18	34	38	36	32
45	%				1			1		11	25	32	24
	A v				22			15		32	47	44	40
40	%	2	3			1			10	30	20	27	7
	A v	29	36			25			52	58	51	43	57
35	%	3	3	1	1			1	2	12	26	22	15
	A v	35	54	41	37			15	58	62	65	46	45
30	%	3	2	2	2			1	1	13	24	20	16
	A v	38	60	35	18			72	25	57	65	39	38
25	%	2	1	4	2			1	1	14	26	19	10
	A v	46	27	27	23			61	61	51	48	36	40
20	%	3	2	2	2				2	17	25	18	10
	A v	35	28	22	18				28	44	33	30	27
15	%	6	3	1	1	1		2	6	15	21	14	14
	A v	28	20	12	11	19		19	24	26	23	17	22
10	%	11	6		1	2	4	18	16	11	6	10	14
	A v	18	15		15	8	11	18	16	14	11	16	16
7	%	8	4		2	3	14	25	7	8	4	13	12
	A v	13	7		4	11	13	18	13	6	10	18	14

TABLE IV-5

Upper Winds (1961-1967), May  
(Percent Frequency and Average Speed).

Direction (degrees)	350- 010	020- 040	050- 070	080- 100	110- 130	140- 160	170- 190	200- 220	230- 250	260- 280	290- 310	320- 340	Total Obs		
<b>Altitude (K ft)</b>															
100	%				14	14	14			14	29		14	7	
95	%				33	11		22		11	22			9	
90	%			8	31	15			15		23		8	13	
85	%	7	7	7	21	14		7		14	14		7	14	
80	%				6	28	28	17	6	11			6	18	
75	%	8			13	38	21	4		8			8	24	
70	%	11			15	19	19	15	4	7	4		7	27	
65	%	6			21			12	21	15	6	9	6	33	
60	%	2	4			4	7	5	11	29	21	12	5	56	
	Av	18	10			9	10	12	15	16	16	12	13		
55	%				1		1	7	24	30	26	9	1	74	
	Av				6		8	21	23	22	25	18	10		
50	%	1						5	17	36	34	7		87	
	Av	22						24	23	33	28	32			
45	%	2	1					3	14	43	21	14	2	95	
	Av	8	9					38	31	42	39	32	26		
40	%	2	1					1	5	12	38	22	15	3	98
	Av	16	7					11	28	42	54	44	30	36	
35	%	3	1	2		2	1	2	16	33	21	13	6	103	
	Av	41	8	14		10	24	64	49	55	43	36	38		
30	%	5	1	4	1	2	1	6	19	27	19	11	5	104	
	Av	43	27	12	9	12	21	48	48	46	41	41	40		
25	%	5	2	3	1	3	2	8	19	23	22	9	5	106	
	Av	33	31	22	10	11	12	34	41	42	37	32	29		
20	%	5	1		5	3	3	8	19	22	21	8	6	107	
	Av	38	22		8	12	13	33	36	28	31	20	22		
15	%	9	2	1	1	4	2	16	20	17	17	8	4	105	
	Av	20	16	7	12	13	14	23	22	23	21	14	17		
10	%	9	2	1	2	4	8	20	19	12	9	5	10	101	
	Av	14	10	7	6	15	19	18	16	12	15	12	13		
7	%	9	4	1	1	6	13	26	8	3	3	16	9	89	
	Av	9	10	7	11	15	15	15	10	9	13	14	14		

TABLE IV-6  
Upper Winds (1961-1967), June  
(Percent Frequency and Average Speed)

Direction (degrees)	350- 010	020- 040	050- 070	080- 100	110- 130	140- 160	170- 190	200- 220	230- 250	260- 280	290- 310	320- 340	Total Obs
Altitude (K ft)													
100	%				67	33							3
95	%				75	25							4
90	%			18	45	18						9	9
85	%			9	73	9	9						22
80	%		3	16	42	32	6						31
75	%	3		9	47	32	9						34
70	%		2	12	48	23	10		5				40
65	%		6	4	33	24	15	9		4	2	2	54
60	%	5	3	3	11	12	16	12	11	8	11	3	5
	Av	10	8	10	10	14	13	13	12	9	11	9	9
55	%	1	3		4	1	4	13	19	29	18	6	3
	Av	8	12		8	7	10	17	17	18	17	15	17
50	%	3			1		1	4	14	27	32	12	4
	Av	19			11		17	14	25	27	32	16	23
45	%	1			1	1		5	15	25	36	9	6
	Av	30			13	18		18	33	48	38	26	32
40	%	3			1		4	4	14	26	32	9	7
	Av	30			18		20	23	32	53	46	35	35
35	%	4			2	2	2	3	4	12	26	26	10
	Av	32			32	24	22	18	36	45	51	47	32
30	%	4	1	2	1	5	2	4	15	25	21	9	12
	Av	38	10	28	11	27	22	33	42	40	42	19	30
25	%	4	3	1	2	3	4	8	14	25	20	9	8
	Av	16	18	12	20	29	20	23	36	32	41	20	32
20	%	3	2	1	1	5	4	10	21	22	20	6	7
	Av	12	12	21	11	27	16	25	20	26	26	22	24
15	%	6	3	2	3	2	6	16	25	18	12	5	5
	Av	16	14	7	20	28	16	16	18	17	15	17	18
10	%	7	2	5	1	5	9	28	16	8	3	10	8
	Av	9	18	8	13	16	12	17	13	8	13	16	13
7	%	10	4	1	3	4	12	22	8	2	3	8	20
	Av	9	11	9	7	8	13	14	13	8	13	15	12

TABLE IV-7

Upper Winds (1961-1967), July  
(Percent Frequency and Average Speed)

Direction (degrees)	350- 010	020- 040	050- 070	080- 100	110- 130	140- 160	170- 190	200- 220	230- 250	260- 280	290- 310	320- 340	Total Obs
<b>Altitude (K ft)</b>													
100	%				100								3
95	%				25	75							4
90	%					67	33						6
85	%					8	77	15					13
80	%					5	79	16					19
75	%					5	67	29					21
70	%				3	12	42	33	9				33
65	%					8	12	30	32	16	2		50
60	%				3	5	16	18	36	10	5	5	
	Av				12	15	14	15	14	11	10	26	
55	%	5	3	1	2	1	10	16	31	20	9		86
	Av	10	15	9	14	8	16	18	21	18	15		
50	%	2						10	34	36	11	4	
	Av	26						28	26	30	27	35	20
45	%							5	36	47	9	3	
	Av							36	48	42	33	33	109
40	%	1			1			8	42	35	10	3	
	Av	7			7			47	54	46	39	35	115
35	%	2				1	5	40	34	10	4	3	
	Av	8				12	39	45	39	36	37	24	
30	%	2				2	5	35	36	10	6	3	
	Av	11				10	26	38	32	27	29	14	
25	%	2		1	1	2	9	34	31	11	8	2	
	Av	14		5	7	15	21	29	26	20	23	8	
20	%	1	1	1	2	1	18	40	19	11	4	3	
	Av	12	20	14	13	7	20	23	19	13	18	16	
15	%				2	4	12	21	41	11	7	1	
	Av				10	14	14	22	19	12	10	8	118
10	%	5	1		3	1	9	35	32	8	3	1	
	Av	10	9		6	5	11	17	11	10	12	16	
7	%	2	2	2			21	38	24	1	4	3	
	Av	10	8	6			11	15	12	7	7	6	95

TABLE IV-8

Upper Winds (1961-1967), August  
(Percent Frequency and Average Speed)

Direction (degrees)	350- 010	020- 040	050- 070	080- 100	110- 130	140- 160	170- 190	200- 220	230- 250	260- 280	290- 310	320- 340	Total Obs
<b>Altitude (K ft)</b>													
100	%				11	78	11						9
95	%				8	92							13
90	%					76	24						17
85	%					82	18						22
80	%				7	78	15						27
75	%					23	50	27					30
70	%	2	2	19	51	21	5						43
65	%	5	5	16	34	21	7		2	3	3	2	61
60	%	2	8	5	18	20	12	5	8	5	7	5	60
	Av	18	10	12	12	12	13	12	15	8	10	13	7
55	%	3	3	3	4	6	9	10	21	12	22	8	1
	Av	10	8	10	11	13	13	18	17	21	15	16	14
50	%	2		1	1		2	11	26	17	24	12	5
	Av	10		8	5		20	19	24	31	30	23	19
45	%					3	1	3	25	31	29	6	2
	Av					8	22	12	39	39	43	26	32
40	%			1		1	1	7	31	26	25	5	3
	Av			30		17	40	34	45	46	50	37	37
35	%	1		1			4	9	26	26	24	5	3
	Av	46		13			28	33	36	43	40	33	26
30	%	1	1		1	2	5	16	20	25	17	9	3
	Av	11	9		21	26	16	21	40	32	36	26	33
25	%	2	1	1	1	4	7	12	24	19	20	6	4
	Av	12	11	6	21	12	15	19	27	27	28	23	25
20	%	2		2	1	2	10	13	26	21	15	7	2
	Av	14		6	10	8	14	18	24	18	19	19	17
15	%		1	1	3	2	12	23	32	14	7	3	1
	Av		6	8	11	10	14	18	18	15	19	15	9
10	%	3	2	1	1	3	8	29	31	11	4	4	3
	Av	8	4	7	6	13	8	18	12	10	10	14	9
7	%	2	1		2	4	22	26	20	2	4	13	2
	Av	8	10		9	7	11	12	15	6	7	8	10

## TABLE III

Upper Winds (1961-1967), September  
(Percent Frequency and Average Speed)

Direction (degrees)	350- 010	020- 040	050- 070	080- 100	110- 130	140- 160	170- 190	200- 220	230- 250	260- 280	290- 310	320- 340	Total Obs
<b>Altitude (K ft)</b>													
100	%			20	20	60							5
95	%			11	11	33	22						9
90	%			11	22	44						11	9
85	%	8		15	8	15	23	8				15	8
80	%		10	20	30	5	5	5	10	15			20
75	%	4	19	12	19	19	12	8	4				4
70	%	3	6	18	41	12	3	3	9			6	34
65	%	8	10	15	15	13	3	3	5	8	5	8	39
60	%	2	4	2	8	10	4	6	10	20	12	14	8
	Av	12	10	11	14	11	8	11	13	16	13	13	12
55	%	3	3	3	2	3	6	3	17	14	29	8	11
	Av	14	15	16	18	18	17	10	19	22	24	27	21
50	%	2	2		5		2	6	8	26	31	12	6
	Av	30	26		26		18	26	34	35	34	30	29
45	%	4	2	1	3	1		4	11	21	32	13	7
	Av	30	46	55	45	15		45	38	52	44	43	28
40	%	7	3	3	2	2	2	4	9	23	27	10	7
	Av	41	37	57	48	16	31	47	62	63	57	47	40
35	%	7	4	5	1	3	2	2	10	26	24	7	10
	Av	55	42	52	51	29	41	66	45	57	47	48	40
30	%	8	3	3	5		5	2	16	24	16	11	9
	Av	47	41	50	37		27	23	41	46	43	31	43
25	%	8	3	4	4	3	4	5	8	21	17	14	8
	Av	40	30	39	32	21	18	33	35	40	44	28	37
20	%	4	6	4	5	4	2	5	13	18	15	13	10
	Av	34	21	42	24	14	28	26	29	31	29	27	30
15	%	5	5	5	4	5	6	9	20	15	12	9	6
	Av	26	21	24	21	14	14	21	20	18	22	26	24
10	%	6	8	2	5	5	8	24	16	8	6	8	6
	Av	19	11	12	12	15	12	16	15	16	15	18	106
7	%	7	7	1	5	7	11	30	12		2	9	9
	Av	12	12	12	10	8	11	15	12		10	12	11
													88

TABLE IV-10  
Upper Winds (1961-1967), October  
(Percent Frequency and Average Speed)

TABLE IV-11

Upper Winds (1961-1967), November  
(Percent Frequency and Average Speed)

Direction (degrees)	350- 010	020- 040	050- 070	080- 100	110- 130	140- 160	170- 190	200- 220	230- 250	260- 280	290- 310	320- 340	Total Obs
<b>Altitude (K ft)</b>													
100	%		14	14					29	43			7
95	%			17	8				8	50	17		12
90	%			21	7				7	57	7		14
85	%		6	11	17					11	22	22	11
80	%	17	4	17	22	4				4	26	4	23
75	%	7	4	15	22	7		4	4	7	4	19	7
70	%	6	9	13	9	6	3	3	3	9	13	19	6
65	%	10	8	2	6	4		8	6	12	24	10	10
60	%	5	5	3		2		5	6	22	30	14	9
	Av	15	13	12		16		12	17	19	21	19	16
55	%	4	1	1			1		4	31	31	20	7
	Av	21	8	9			10		39	37	22	29	21
50	%	5	3			1	1		9	33	23	15	10
	Av	19	13			24	13		36	45	44	34	34
45	%	3	2	1	1	1			6	35	24	14	12
	Av	26	27	17	14	18			31	60	43	43	38
40	%	6	4	2	2	1			6	32	21	16	11
	Av	44	31	26	10	36			47	73	51	49	56
35	%	5	4	3		1	2	3	8	26	24	11	13
	Av	73	30	32		30	14	25	68	71	51	59	58
30	%	6	3	4		1	1	2	10	32	17	12	12
	Av	70	53	31		31	6	20	59	60	42	57	60
25	%	7	3	3	1	1		2	13	30	15	14	12
	Av	53	48	32	9	20		24	48	54	35	48	47
20	%	8	6	3	1	1	1	6	17	20	15	15	7
	Av	38	26	18	16	22	5	13	33	39	32	33	43
15	%	6	7	2	1	3		6	20	17	13	15	11
	Av	29	24	18	9	10		13	25	27	26	26	28
10	%	11	5	3	2	3	3	16	26	8	5	10	9
	Av	21	20	12	9	8	13	18	20	17	15	21	21
7	%	8	7	1		5	19	27	10	1	2	4	17
	Av	14	11	6		9	13	17	14	6	6	16	18

TABLE IV-12

Upper Winds (1961-1967), December  
(Percent Frequency and Average Speed)

Direction (degrees)	350- 010	020- 040	050- 070	080- 100	110- 130	140- 160	170- 190	200- 220	230- 250	260- 280	290- 310	320- 340	Total Obs
<b>Altitude (K ft)</b>													
100	%	33	33										33
95	%		50										17
90	%	10	20		10			10		10	20	10	10
85	%	8	17	8		8						17	17
80	%	19	10	14	14				5	5	5	14	14
75	%	18	18	5	14	5				14		18	9
70	%	11	7	7	4	11		4		7	14	14	21
65	%	14		8	3			3	8	8	19	8	14
												16	37
60	%	6	2	2				2	4	18	22	16	27
	Av	26	27	20				10	15	20	24	24	49
55	%	4	2	2				2	4	12	30	32	14
	Av	34	14	15				20	30	29	34	29	57
50	%	3	2	2					8	9	27	32	18
	Av	3.9	22	21					35	37	40	40	66
45	%	5	1	3				1	4	11	29	26	20
	Av	43	27	14				34	34	42	51	45	76
40	%	10	1	1		2	2		5	14	17	26	21
	Av	48	26	28		16	12		39	49	62	57	84
35	%	12	4	4	1	5	1	2	5	6	16	21	24
	Av	36	80	24	39	24	13	36	44	49	65	65	85
30	%	15	6	1		2	3	1	6	6	17	20	24
	Av	43	30	32		17	30	47	41	53	42	55	89
25	%	8	7	1	1	2	3	2	8	6	10	26	24
	Av	38	38	26	35	28	15	27	29	50	54	46	87
20	%	7	8		2	2	3	1	7	10	8	32	20
	Av	30	32		28	31	11	28	20	30	43	39	90
15	%	9	3	3	5	2	2	1	8	8	11	26	17
	Av	23	20	14	16	23	10	15	14	19	37	33	87
10	%	13	11	3	6	3		5	9	7	10	10	22
	Av	18	14	14	19	10		13	15	22	16	30	87
7	%	21	13	1		3	7	13	4	1	1	9	25
	Av	14	14	4		8	13	15	30	10	9	17	75

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